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समाचार पत्रों से चयित अंश
Newspapers Clippings

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THE NEW INDIAN EXPRESS

Mon, 04 Oct 2021

DRDO set for experimental test of long range land attack cruise missile

Though the turbofan engine performed well, the missile did not cover the full range due to a possible snag in the control system

By Hemant Kumar Rout

Bhubaneswar: The Defence Research and Development Organisation (DRDO) is all set for an experimental test of India's first long range land attack cruise missile from a defence facility off Odisha coast next week.

A model of long range land attack cruise missile at a defence expo

The missile, also dubbed as Indigenous Technology Cruise Missile (ITCM), a derivative of Nirbhay, will be flight-tested with indigenously developed engine, propulsion and navigation systems.

Preparations are underway at the Integrated Test Range (ITR) for the test. Defence sources said an area warning has already been issued for the launch of an experimental flight vehicle over the Bay of Bengal between October 6 and 8."The mission depends on the weather conditions. If things go as per plan, the missile will be test-fired on Wednesday. As the missile is expected to travel more than 700 km, the tracking systems have already been positioned to capture data," said the sources.

The ITCM with the new Manik engine was first tested on August 11. The mission was a partial success. Though the turbofan engine performed well, the missile did not cover the full range due to a possible snag in the control system.Immediately after the test, the DRDO claimed that the missile was tested for a short range and the next test will be to cover the full range. The faults in the system have been rectified and the scientists are leaving no stone unturned for the maiden full range testing of the missile, said a defence official.

Sources said after the successful test of the indigenously developed turbofan engine, the Indian Air Force and Navy have evinced interest for the air and ship variants of the missile. The DRDO is also learnt to have initiated design modifications to develop the missile for all three services and meet the requirement of future warfare.

Launched as subsonic cruise missile Nirbhay in 2012, the weapon system has been developed into the long range land attack cruise missile system. It will soon have two more variants. The land attack version will be deployed in the armed forces after a couple of user trials.The cruise missile will supplement the Indo-Russian joint venture supersonic cruise missile BrahMos. It has a strike range of 1,000 km and is capable of loitering and cruising at 0.7 Mach at an altitude as low as 100 metre.

https://www.newindianexpress.com/states/odisha/2021/oct/04/drdo-set-for-experimental-test-of-long-range-land-attack-cruise-missile-2367354.html

PUNEKAR NEWS

Sun, 03 Oct 2021

Pune-based DIAT develops herbal-based biocidal spray as healthy air

Pune: On the occasion of the 152nd anniversary of Mahatma Gandhi on 2nd October 2021, the Defence Institute of Advanced Technology (Deemed University) has developed a Herbal-Based Biocidal Spray as 'Healthy Air'.

The technology of Healthy Air which is the registered product of DIAT (DU), was developed under Prof. Balasubramanian K, HoD, Deptt of Metallurgy & Materials Engg and the technology was transferred free of cost to Vaishnavi Khadi Gramodyog, Solan, Himachal Pradesh [Registered under the Khadi institutions] and M/s Sai Krupa, Pune as the firm has an association with Khadi and Village Industries, Govt of India.

The product is Herbal based room spray which kills Bacteria, Yeast and Mould and it is antipollution and neutralises virus in air when sprayed indoors like offices, labs, workshops, hospital wards, indoor spaces and hospital isolation rooms often.

The product formulations were tested by the inventor experimentally and computationally to understand the efficacy of its various constituents and extensively studied for antimicrobial, antifungal, biochemical potency, amino acid neutralization, computational heat map evaluation and life science analysis in the best accredited test laboratories.

The manufacturers with the support of the inventor had optimized bottle volume, bottle design, nozzle diameter, packaging and bottle material and started receiving the initial orders from hospitals and banks across India.

On this occasion, Vice Chancellor, DIAT requested the manufactures to make the product at affordable cost for use by common man.

https://www.punekarnews.in/pune-based-diat-develops-herbal-based-biocidal-spray-as-healthy-air/

THE TIMES OF INDIA

Mon, 04 Oct 2021

DIAT develops herbal biocidal room spray

Pune: The Defence Institute of Advanced Technology (DIAT), controlled by the Defence Research and Development Organisation, has developed a herbal biocidal room spray named 'Healthy Air' to kill bacteria, yeast, and mold, on Saturday.

"It neutralizes virus in the air when sprayed in indoor spaces," a DIAT release stated.

Balasubramanian K, head of DIAT's department of metallurgy and materials engineering, has developed the product. "The formulations were tested by the inventor, experimentally and computationally, to understand the efficacy of its various constituents. It is extensively studied for antimicrobial, antifungal, biochemical potency, amino acid neutralization, computational heat map evaluation, and life science analysis," a release stated.

"The technology was transferred for free to two firms in Himachal Pradesh and Pune, registered under the khadi and village industries unit," a DIAT official said.

C P Ramanarayanan,DIAT VC, said the manufacturers must make the product available at an affordable cost.

https://timesofindia.indiatimes.com/city/pune/diat-develops-herbal-biocidal-room-spray/articleshow/86738037.cms

THE HINDU

Sun, 03 Oct 2021

After successful maiden sea trials, Vikrant to sail out for Phase-II trails

Indigenous aircraft carrier likely to be commissioned in August 2022

By Dinakar Peri

New Delhi: The maiden sea trials of the indigenous aircraft carrier Vikrant have progressed very well and the second phase of trails are expected to begin end October with the third phase planned in December, a defence official said.

"Vikrant is expected to be delivered to the Navy in April and likely to be commissioned in August 2022," the official said which would also coincide with 75 years of Independence.

Simultaneously, work is under way on the aviation complex of the carrier for which a Russian team is here. The aviation trials will continue once the carrier is commissioned and they would be done with the Mig-29K aircraft in service with the Navy, the official said.

Indigenous aircraft carrier Vikrant returns to Kochi Port after a successful maiden sea voyage on August 8, 2021. | Photo Credit: Thulasi Kakkat

Extremely satisfactory results

During the maiden sea trial in August, Vikrant's performance, including hull, main propulsion, power generation and distribution and auxiliary equipment were tested. The results were extremely satisfactory and the engine showed 100% performance and some issues which had come up were being addressed, the official said.

Vikrant, designed by the Navy's Directorate of Naval Design and built by Cochin Shipyard Limited, is 262m long, 62m at the widest part and height of 59m including the superstructure and

has more than 76% indigenous content.. There are 14 decks, including five in the superstructure and over 2,300 compartments designed for a crew of around 1,700 people, with separate accommodation for women officers.

In the Phase-II of the trials, complete habitat, including each of the over 2,300 compartments, would be thoroughly checked, the official said.

Twin engine carrier fighters

The Navy had floated a Request For Information (RFI) issued in 2017 to procure 57 twin engine carrier fighters and the responses are being evaluated. As reported by *The Hindu* earlier, the number was to be downsized from 57 to 36. A final decision is yet to be taken and the number could be downsized further, it has been learnt.

This is in the backdrop of a new indigenous Twin Engine Carrier Based Deck Fighter (TEBDF) being designed and developed by the Defence Research and Development Organisation (DRDO) and Aeronautical Development Agency (ADA).

Concurrently with sea trials of Vikrant, plans are afoot for the trials of the fighter jets in the fray for the tender. “Initially, trials will be done on the Shore Based Test Facility (SBTF) at Goa and then on the aircraft carrier,” the official said. The aircraft likely to be tested are Boeing F/A-18 Super Hornet, Dassault Avaition Rafale and Saab Gripen-E.

In preparation for the trials, Boeing had last December shown the comparability of its F/A-18 Super Hornet with the Navy’s Short Takeoff but Arrested Recovery (STOBAR) system by launching it from a ski-jump from a shore based facility at Naval Air Station Patuxent river in Maryland, U.S..

The Navy had contracted 45 Mig-29 Kaircraft from Russia and currently in service which Navy officials had stated earlier that there will not be enough aircraft to operate from both carriers.

The TEBDF under development is progressing well and the first flight is planned in 2026, the official said. The Navy is working closely with the DRDO and the ADA on the project, officials on both sides said.

Medium weight fighter

The TEDBF is envisaged as a twin-engine medium weight fighter with an all up weight of 26 tonnes and wing folding and is meant to replace the Mig-29Ks in service, said Dr. Girish S Deodhare, Distinguished Scientist and Programme Director (Combat Aircraft) & Director, Aeronautical Development Agency (ADA) recently.

On the progress of TEDBF, Dr. Deodhare had said the Preliminary Service Quality Requirements (PSQR) were defined over 6-8 months in which two configurations were evolved in coordination with the Navy. “From that one of the configuration preferred by the Navy was selected and the PSQRs are final,” he had stated.

In January 2020, the DRDO had demonstrated successful arrested landing of Naval Light Combat Aircraft (LCA) on INS Vikramaditya and subsequently, 18 take-offs and landings were conducted in five days. The TEDBF is being taken up from the experience of the Naval LCA.

https://www.thehindu.com/news/national/after-successful-maiden-sea-trials-vikrant-to-sail-out-for-phase-ii-trails/article36792637.ece

Hindustan Times

Mon, 04 Oct 2021

India clears defence buys worth ₹54,000 cr in less than month

New Delhi: In a major push to self-reliance in defence, India has signed contracts and cleared projects worth almost ₹54,000 crore in less than a month to boost military capability with locally produced weapons and systems, including transport planes, tanks, helicopters, airborne early warning systems and counter-drone weapons.

On September 24, the defence ministry signed a ₹22,000-crore contract with Airbus Defence and Space for 56 C-295 medium transport aircraft.(Airbus)

"The development reflects the government's commitment to achieving *atmanirbharta* (self-reliance) in defence manufacturing," an official said on the condition of anonymity. "The domestic defence ecosystem is set to become more robust in the coming years as we cut down our dependence on imported military hardware."

On September 24, the defence ministry signed a ₹22,000-crore contract with Airbus Defence and Space for 56 C-295 medium transport aircraft to modernise the Indian Air Force's transport fleet. Airbus Defence and Space and Tata Advanced Systems Ltd will jointly execute the contract. Airbus will deliver the first 16 aircraft in ready condition from Spain and Tata will assemble the rest in India.

The C-295 deal was signed a day after the ministry placed an order worth ₹7,523 crore with Heavy Vehicles Factory in Avadi, Tamil Nadu, for 118 Arjun Mk-1A tanks.

The Cabinet Committee on Security last month also cleared a Defence Research and Development Organisation (DRDO) proposal to develop a new airborne early warning and control aircraft for the air force using Airbus jets bought from Air India. The deal is expected to be worth around ₹11,000 crore.

"Indigenous defence projects will involve hundreds of Indian vendors and generate thousands of jobs," said a second official, also declining to be named.

The defence acquisition council – India's apex procurement body – last week accorded its acceptance of necessity (AoN) for defence purchases worth ₹13,165 crore, including 25 advanced light helicopters Mark III.

India has set aside ₹70,221 crore this financial year for domestic defence procurement, accounting for 63% of the military's capital expenditure budget. Last year, the ministry spent over ₹51,000 crore, or 58% of its capex budget, on domestic purchases.

India has decided to ban the import of 209 weapons and systems to boost self reliance. The ban, to be implemented progressively till 2025, covers artillery guns, missile destroyers, ship-borne cruise missiles, light combat aircraft, long-range land attack cruise missiles, basic trainer aircraft and specified types of helicopters.

https://www.hindustantimes.com/india-news/selfreliance-push-india-clears-defence-buys-worth-54-000-cr-in-less-than-month-101633286524970.html

THE FREE PRESS JOURNAL SINCE 1928

Sat, 02 Oct 2021

Indore: Ready to share 1,700 patents with MSMEs in state: DRDO Chief

Gwalior lab to act as bridge for industries in state, says Chairman G Satheesh Reddy

Indore: Defence Research and Development Organisation (DRDO), country's flagship R & D organisation, will hand hold state's MSME units technologically and financially, in an effort to make the nation self-sufficient in defence equipments. Organisation's lab in Gwalior would act as a bridge between DRDO and state's entrepreneurs, this was announced by DRDO Chairman G Satheesh Reddy.

Chairman G Sathish Reddy | FP photo

He was addressing over 600 owners of MSMEs and start-ups during 'Business Opportunities for MSMEs in Defence Sector', an event organised jointly by MP's MSME department and DRDO. The event was also attended by MSME Minister OP Saklecha, MP Shankar Lalwani and Industry Commissioner P. Narhari. Reddy said that DRDO had 1,700 patents, which it was ready to share with interested industries in the state. "Currently we are importing 40% equipments, goods to meet military requirement. We will manufacture this in India," he said.

He said that Defence Research Development Establishment (DRDE) in Gwalior, the nodal lab for the development of Chemical and Biological defence technologies, would work as a bridge among DRDO, the State Government and entrepreneurs. "Recently we appointed Dr. Manmohan Parida as director of DRDE. We will form a team under his leadership, which will work with local units."

He said that the DRDE lab developed hand sanitizer just within three days of announcement of lockdown on March 25, 2020. The same lab also developed DDG (2DG) dose, which helps improve Oxygen saturation level in body, he added. He said that DRDO was not into production of equipments. It only indulges in research and development and later hands over the technology to private or government industries for commercial production.

Cyber security and AI: DRDO has started working on cyber security and Artificial Intelligence (AI). We have developed a centre in DRDO lab in Pune. It will get work done online.

https://www.freepressjournal.in/indore/indore-ready-to-share-1700-patents-with-msmes-in-state-drdo-chief

THE FREE PRESS JOURNAL SINCE 1928

Sat, 02 Oct 2021

Indore: Entire ecosystem needed for defence cluster, says Minister Saklecha

DRDO Chief, Dr Reddy, talking to this correspondent said that any existing unit or startup in the state can start working in any sector related to the defence industry; be it aircraft, missile, ammunition, textile, food, electronics, laser etc.

Indore: MSME minister in the state, OP Saklecha, said that setting up of defence cluster would only be possible in the state when the entire ecosystem is in place; where companies and technology come together. Otherwise, it's all useless talk, he said.

MSME Minister Om Prakash Saklecha addressing | FP Photo

Saklecha was speaking to this correspondent on the sideline of a workshop on 'Business Opportunities for MSMEs in Defence Sector', organised at Brilliant Convention Centre on Friday. The keynote speaker at the workshop was Dr G Satish Reddy, chairman Defence Research and Development Organisation (DRDO).

Saklecha said they were making all-out efforts to set up defence cluster and for the first time different issues related to defence sector are being discussed, which is an encouraging sign.

DRDO has no plans to set up new lab in State

DRDO chief, Dr Reddy, talking to this correspondent said that any existing unit or startup in the state can start working in any sector related to the defence industry; be it aircraft, missile, ammunition, textile, foods, electronics, laser etc. He, however, made it clear that the DRDO has no plans to set up a new laboratory in the state, apart from the existing one in Gwalior.

State to have HR training cluster

In his address at the workshop minister Omprakash Saklecha said that with the coordination between existing MSMEs and new technology, we will be able to give new gifts to the state in the field of industry. He said the trinity of entrepreneurship, finance and technology are coming together and this would make Madhya Pradesh self-reliant and not a single person would remain unemployed in the state. He said that industrialists are being provided land through development of clusters in the state, due to which industries are getting a new impetus in the state.

He requested DRDO chief Dr Reddy to provide the necessary support to the entrepreneurs of the State through various labs of DRDO. He said that this would give a new impetus to the industry of the state. He said that DRDO should communicate which equipment they are importing, and then the units would start making them and if necessary also export them.

Minister Saklecha informed that a proposal has been sent by the State Government to the Central Government for setting up a cluster for human resource training.

State's youth rich in ideas: CM

Chief Minister Shivraj Singh Chouhan, addressing the workshop through a video message said that the state's youth are full of rich ideas and the state is also blessed with resources. If these ideas are used by DRDO and MSMEs, then not only will our production capacity increase but also new employment opportunities would be created.

https://www.freepressjournal.in/indore/indore-entire-ecosystem-needed-fordefence-cluster-says-minister-saklecha

दैनिक भास्कर

Sat, 02 Oct 2021

डिफेंस प्रॉडक्ट्स टेक्नोलॉजी के लिए वर्कशॉप: इंदौर के 600 से ज्यादा उद्यमियों की रुचि देख DRDO सेक्रेटरी गदगद, बोले मैं PM को बताऊंगा

इंदौर: MSME, साइंस और टेक्नोलॉजी का जब समन्वय होता है, तो कुछ नया प्रॉडक्शन होता है। ऐसे में डीआरडीओ (Defence Research and Development Organisaiton) के चेयरमैन डॉ. जी. सतीश रेड्डी का मप्र के उद्योगों के साथ में होना गौरव की बात है। बड़ी चुनौती है कि हम इम्पोर्ट के बजाय ज्यादा से ज्यादा एक्सपोर्ट करें। इसके लिए डीआरडीओ की टेक्नोलॉजी का उपयोग कैसे करें, यह जानना होगा। टेक्नोलॉजी, एंटरप्रिन्योरशिप व फाइनेंस, अगर यह त्रिमूर्ति तैयार हो गई तो हमारा सपना है कि मप्र में एक भी बेरोजगार नहीं होगा। प्रधानमंत्री व मुख्यमंत्री की अपेक्षा एमएसएमई से ही है। प्रदेश के एमएसएमआई मंत्री ओमप्रकाश सकलेचा के उक्त उद्गगार के बाद DRDO सेक्रेटरी ने डिफेंस प्रॉडक्ट्स टेक्नोलॉजी के लिए वर्कशॉप में इंदौर के 600 से ज्यादा उद्यमियों की उपस्थिति देख खुशी जाहिर की और कहा कि पहली बार किसी शहर में डिफेंस की टेक्नोलॉजी से उद्योगों को नए आयाम देने के लिए इतने उद्ममी एकत्रित हुए हैं। मैं इस मामले को प्रधानमंत्री से अवगत कराऊंगा।

वर्कशॉप को संबोधित करते मंत्री सकलेचा।

शुक्रवार को ब्रिलियंट कन्वेंशन सेंटर में आयोजित 'बिजनेस अपार्च्युनिटी इन डिफेंस सेक्टर' की वर्कशॉप मंत्री सकलेचा ने कहा कि पहले पॉवर की शॉर्टेज थी, लेकिन अब इसके सहित समस्याएं हल हो गई हैं। पहले क्लस्टर बनाने या इण्डस्ट्रियल एरिया बनाने के लिए तीन-चार साल लग जाते हैं। चार साल में वह डेवलेप होगा, तब तक फिर आधी से ज्यादा टेक्नोलॉजी बदल जाती हैं। बाजार की जरूरत में अंतर आ जाता है। इसके चलते अब बदलाव किया गया है।

अगर 8-10 उद्यमी साथ में मिलकर कुछ उद्योग स्थापित करना चाहते हैं, तो उन्हें सरकार इकोनॉमिक कॉस्ट में क्लस्टर बनाकर देना चाहती है। अब उद्यमियों के लिए जरूरी है कि रुपया जमीन में नहीं बल्कि टेक्नोलॉजी व इक्विपमेंट में लगाएं।

डीआरडीओ को कौन सी टेक्नोलॉजी पर ध्यान दें

सकलेचा ने कहा कि उद्यमियों को इस पर ध्यान देना होगा कि डीआरडीओ को कौन सी टेक्नॉलॉजी मार्केट को सपोर्ट देगी। एविएशन सहित कई सेक्टर हैं जहां टेक्नोलॉजी के मामले में उद्योगों में कुछ किया जा सकता है। मप्र में उद्योगों का तेजी से विकास हुआ है। हाल में अप्रैल में सबसे ज्यादा 1892 क्लस्टर के लिए भूमिपूजन किया गया था, जिन्हें अब अच्छी गति मिल गई है। उद्यमियों को चाहिए कि वे डीआरडीओ से समन्वय करें ताकि उद्योगों को एक नई दिशा मिले।

मप्र के उद्योगों को गति देगा डीआरडीओ

डीआरडीओ के सेक्रेटरी डॉ. जी. सतीश रेड्डी ने डीआरडीओ द्वारा डेवलप टेक्नोलॉजी पर आधारित प्रोडक्ट्स व नए उद्योगों के अवसर के लिए एमएसएमई इकाइयों के सहयोग एवं टेक्नोलॉजी रैफर पर अपनी बात कही। उन्होंने उद्यमियों को विश्वास दिलाया कि वे डीआरडीओ की टेक्नोलॉजी का लाभ लेकर डिफेंस को प्रॉडक्ट्स बेच सकते हैं। डॉ. रेड्डी ने कहा कि डीआरडीओ द्वारा मप्र में इण्डस्ट्रीज को डेवलप करना है।

डीआरडीओ की देशभर में लैब्स

उन्होंने कहा कि डीआरडीओ केवल रिसर्च एण्ड डेवलप कर डिफेंस को देती है। डीआरडीओ की तमिलनाडु, केरल, हैदराबाद, बेंगलुरु, महाराष्ट्र, जोधपुर, उप्र, उत्तारखण्ड, असम व मप्र के ग्वालियर में लैब्स हैं। यहां डिवाइस, इलेक्ट्रिक, राडार, आर्म्ड व्हीकल, पैराशूट, एयर क्रॉफ्ट्स आदि पर रिसर्च व डेवलपमेंट होता है। ग्वालियर की लैब में 2 डीडीजीएस मेडिसिन बनने लगी है।

नए-नए ये आयाम

- **डॉ. रेड्डी ने कहा रिसर्च एंड डेवलपमेंट के तहत आर्मी को मजबूत करने के लिए जनवरी 2021 में अर्जुन टैंक बनाया था। मामले में फिर प्रधानमंत्री ने इसके प्रॉडक्शन के लिए ऑर्डर दिए थे।**
- **डिफेंस से जुड़े 209 ऐसे प्रॉडक्ट्स हैं, जो अभी बनाए जाने हैं। इसके लिए डीआरडीओ ने अपनी 1300 टेक्नोलॉजी इण्डस्टीज को ट्रांसफर की है।**
- **ऐसे ही 1700 पेटेंट भारतीय उद्योगों के लिए वेबसाइट पर उपलब्ध हैं।**
- **भारत में इम्पोर्ट कम से कम हो, इंडिया खुद इसे बनाएं।**
- **उन्होंने कहा कि युवाओं के स्किल डेवलपमेंट के लिए देश में इस साल 40 यूनिवर्सिटीज में M.Tech. In Defence इस साल से शुरू किया जा रहा है। इसके लिए डीआरडीओ इंटर्नशिप देगी।**
- **अभी साइबर सिक्युरिटी व आर्टिफिशियल इंटेलिजेंस के क्षेत्र में बहुत ज्यादा संभावनाएं हैं। इसके पूर्व वर्कशॉप को सेक्रेटरी व इण्डस्ट्रीज सचिव पी. नरहरि व सांसद शंकर लालवानी ने संबोधित किया।**

https://www.bhaskar.com/local/mp/indore/news/new-direction-with-the-coordination-of-mmme-science-and-technology-drdo-committed-to-industries-128980487.html

दैनिक भास्कर

Sat, 02 Oct 2021

इंदौर में अब डिफेंस क्लस्टर की तैयारी: बड़ा अवसर, 50 हजार करोड़ का कारोबार है डिफेंस में लगने वाले छोटे कलपुर्जों का

इंदौर: लंबे समय बाद इंदौर में डिफेंस पार्क (क्लस्टर) को लेकर एक बार फिर योजना शुरू हो गई है। डीआरडीओ चेयरमैन जी. सतीश रेड्डी के साथ एमएसएमई मंत्री ओमप्रकाश सकलेचा, विभाग सचिव पी. नरहरि व अन्य के साथ हुई चर्चा में इस बात पर सहमति बनी है कि इस सेक्टर में काम करने वाली यूनिट को एक जगह पर ही लाया जाए, इसके लिए शासन जमीन देकर क्लस्टर के रूप में इसे विकास करे। इस योजना पर रेड्डी ने शासन को आश्वस्त किया कि डीआरडीओ इस मामले में पूरी मदद करेगा। रेड्डी ने कहा- आकाश मिसाइल बनाने में लगने वाली 87 फीसदी सामग्री एमएसएमई से आती है। इसका कारोबार करीब 50 हजार करोड़ का है।

इस क्लस्टर की सर्वाधिक संभावना पीथमपुर में बन रही है, क्योंकि यहां से महू भी पास है और इंजीनियरिंग सेक्टर की कई यूनिट मौजूद हैं। करीब दस साल पहले अनिल अंबानी ने पीथमपुर में इस पार्क के लिए जमीन आरक्षित कराई थी, लेकिन वह योजना बंद हो गई।

सांसद शंकर लालवानी ने भी इंदौर के आसपास कई इंडस्ट्री द्वारा डिफेंस सेक्टर के लिए काम करने और अच्छी सुविधा होने की बात कहते हुए इस सेक्टर में यहां बड़े क्लस्टर बनाने का प्रस्ताव भी रखा। कार्यक्रम में सीआईआई मप्र के चेयरमैन सौरभ सांगला ने मप्र को लेकर जानकारी दी, वहीं सचिव नरहरि ने यहां की औद्योगिक नीति, मप्र में संभावनाओं को लेकर प्रेजेंटेशन दिया।

चेयरमैन ने छोटी इंडस्ट्री को आगे आने के लिए कहा

रेड्डी ने ब्रिलियंट कन्वेंशन सेंटर में हुए कार्यक्रम में कहा कि मिसाइल, बम, गन, साइबर सिक्यूरिटी, राडार, आर्टिफिशियल इंटेलीजेंसी सभी के उत्पादन में काफी स्कोप है। अभी कई उत्पादों को बनाने में लगने वाले छोटे पुर्जे, सामग्री विदेशों से आती है जो 40 से 50 हजार करोड़ का कारोबार है, इसमें मप्र, इंदौर की इंडस्ट्री आगे आ सकती है।

आकाश मिसाइल बनाने में लगने वाली 87 फीसदी सामग्री एमएसएमई से आती है, इससे पता चलता है कि छोटे उद्योगों के लिए इस सेक्टर में कितना स्कोप है। रेड्डी ने कहा कि अब इंडस्ट्री को हम सीधे लिंक कर रहे हैं, उन्हें दस करोड़ का फंड दे रहे हैं, स्टार्टअप को इंक्यूबेशन सेंटर के माध्यम से एक करोड़ का फंड दे रहे हैं।

प्रदेश की यूनिट को जोड़ने के लिए ग्वालियर लैब इंचार्ज की रहेगी कमेटी

रेड्डी ने मंत्री सकलेचा के प्रदेश के उद्योगपतियों की मदद के लिए कमेटी बनाने की मांग पर कहा कि तत्काल ही ग्वालियर स्थित डीआरडीओ की लैब इंचार्ज मनोहर पिरोदा की कमेटी रहेगी, यह विविध औद्योगिक एसोसिएशन के साथ मिलकर काम करेगी। उन्होंने बताया कि सैनिटाइजर से लेकर मास्क, पीपीई किट की टेस्टिंग आदि सभी में ग्वालियर लैब ने अहम भूमिका निभाई थी।

स्किल मैन पावर डेवलपमेंट के लिए सेंटर खोलेंगे

रेड्डी ने कहा कि टाइप वन व टू की दो हजार इंडस्ट्री हमारे उत्पादन में जुड़ी है, वहीं छोटे पुर्जे सप्लाय करने वाली टाइप थ्री इंडस्ट्री दस हजार से ज्यादा लिंक है। वहीं मंत्री सकलेचा ने कहा कि मैन पावर स्किल

डेवलपमेंट सेंटर के लिए केंद्र से बात चल रही है, हम यह सेंटर बनाकर उद्योगों को कुशल लोग देना चाहते हैं, जिससे सभी को रोजगार मिलेगा।

https://www.bhaskar.com/local/mp/indore/news/big-opportunity-the-business-of-50-thousand-crores-is-of-small-parts-used-in-defense-128982615.html

Sat, 02 Oct 2021

Need students with innovative ideas to make India prosper: DRDO Chairman G Satheesh Reddy

Dr G Satheesh Reddy, Secretary, Department of Defence (R&D) and Chairman, DRDO said that they can support students' innovation and products if they can help strengthen our defence sector

Today, the country is looking for innovations from youngsters who can come out with products that are first-of-its-class in the world. What can make this country prosperous? It is the technology that can make this country prosperous, said Dr G Satheesh Reddy, Secretary, Department of Defence (R&D) and Chairman, DRDO who was present at the virtual convocation ceremony by the Indian Institute of Information Technology, Design and Manufacturing (IIITDM) Kancheepuram. He further added, "For the country to become prosperous, the seed is with institutes like IIITDM where people come to learn science and technology and come up with an innovative idea that involves a lot of design and technology."

Dr G Satheesh Reddy, Secretary, Department of Defence (R&D) and Chairman, DRDO (Picture: IIITDM)

IIITD conducted the ninth convocation on October 1 and a total of 293 students studying different courses graduated from IIITDM during this convocation. Dr G Satheesh Reddy, Secretary, Department of Defence (R&D) and Chairman, Defence Research and Development Organisation (DRDO), Prof S Sadagopan, Chairman, Board of Governors, IIITDM Kancheepuram, Prof DVLN Somayajulu, Director, IIITDM Kancheepuram, Faculty and staff awarded the degrees virtually to all the students.

Indian Institute of Information Technology, Design and Manufacturing (Picture: College website)

Elaborating on how DRDO can support such innovations by students, Dr Satheesh Reddy said, “DRDO has got a scheme called Technology Development Funding. It funds youngsters who are coming out of the colleges as just young graduates and who can join these incubation centres and who has an idea that can be converted into a design. We support them with funds of Rs 1 crore for an idea that actually works for the defence of the country or the security of the country. If you are establishing it as an industry and then you come out with a design and product that can be used in the defence sector, we can provide funds up to Rs 10 crore."

Meanwhile, in their new initiative, IIITDM is planning to launch MTech in Mechanical Engineering with a specialisation in AI and Robotics, and MTech in Power Electronics and System Design shortly. This year, the institute started an MTech programme in Computer Science with a specialisation in Data Science and AI.

https://www.edexlive.com/news/2021/oct/01/need-students-with-innovative-ideas-to-make-indian-prosper-drdo-chairman-g-satheesh-reddy-24463.html

INDIA TODAY

Sat, 02 Oct 2021

IAF Chief Vivek Ram Chaudhari: Ready for any eventuality, focus on being atmanirbhar

Air Chief Marshal Vivek Ram Chaudhari, who took charge as the chief of the Indian Air Force (IAF), said the IAF was ready to meet 'any and every' challenge

By Manjeet Negi

New Delhi: Air Chief Marshal Vivek Ram Chaudhari, who took charge as the chief of the Indian Air Force (IAF), said the IAF was ready to meet "any and every" challenge while advocating the need to be "atmanirbhar (self-reliant)".

Air Chief Marshal Vivek Ram Chaudhari (Source: IAF/Twitter)

"The IAF is ready for any eventuality and has the potential. Our focus will be on being atmanirbhar and quick induction of new logistics," Vivek Ram Chaudhari told India Today TV in an exclusive interview soon after laying a wreath at the National War Memorial.

Air Chief Marshal Vivek Ram Chaudhari said his priority would be to ensure that the safety of the nation was assured through appropriate and correct use of air power. "Second priority is to be able to train, motivate and equip all our personnel to take on challenges of future warfare," he said.

Vivek Ram Chaudhari succeeded Air Chief Marshal RKS Bhadauria following his retirement. Air Chief Marshal Vivek Ram Chaudhari also vowed to enhance the capabilities of the IAF.

"We were quick to introduce Rafale fighter jets and surface-to-air weapons. DRDO is working on different categories that are likely to help the IAF in the coming days. In the last one-and-half years, several new weapons and aircraft have been inducted into the Air force," he said.

Chaudhari said the Indian-made Astra, Akash missiles, 83 LCAs and MRSAM from DRDO would be immediately operationalised.

Vivek Ram Chaudhari, who has served in various important capacities at both field formations and air headquarters, took charge of the IAF at a time when the country is still in a stand-off position at the borders with China and tensions in the region are high due to the situation in Afghanistan.

Chaudhari also oversaw India's aerial response to China's aggression at the Line of Actual Control (LAC) in eastern Ladakh.

VR Chaudhari, whose son is a Rafale fighter aircraft pilot, will also be responsible for the modernisation of the fighter aircraft fleet as more indigenous and foreign-origin jets are planned to be inducted in the near future.

An alumnus of the National Defence Academy, Air Chief Marshal Chaudhari was commissioned into the fighter stream of the IAF on December 29, 1982.

In a career spanning nearly 38 years, the officer has flown a wide variety of fighter and trainer aircraft in the inventory of IAF.

He has a flying experience of more than 3,800 hours, including operational flying on MiG-21, MiG-23 MF, MiG 29 and Su-30 MKI fighter jets.

https://www.indiatoday.in/india/story/iaf-chief-vivek-ram-chaudhari-china-border-fighter-aircraft-atmanirbhar-1859449-2021-10-01

THE NEW INDIAN EXPRESS

Mon, 04 Oct 2021

New Air Chief should focus on IAF's indigenous projects, suggest experts

Also, the new air chief will be overseeing the Defence Space Agency (DSA), set up in May 2019, in its initiative to get fully operational

By Mayank Singh

New Delhi: The new chief of the Indian Air Force (IAF) Air Chief Marshal V R Chaudhari should focus on the indigenous projects and leading the air force to meet the challenges of drone, assert security experts.

Chaudhari took over the command from RKS Bhadauria on October 1.

Strategic Affairs expert Air Commodore Prashant Dixit (retd) believes that keeping focus towards make in India, the chief will have to "push" the industry, public and private that are executing various projects. "Delay has been plaguing the projects," says Air Commodore Dixit.

Tejas aircraft. (File| Nagaraja Gadekal/ EPS)

He adds: "Hindustan Aeronautics Limited (HAL) has been extended Rs 45,696 crore contract for 73 LCA Tejas Mk-1A fighter aircraft and 10 LCA Tejas Mk-1 Trainer aircraft which need to be delivered in time. Also, Advanced Medium Combat Aircraft (AMCA) will require handholding."

"The IAF is down to 30 operational squadrons against the sanctioned 42 squadrons. It needs mid-air refuellers and airborne early warning and control system," says Dixit. The day Air Chief Chaudhari assumed the charge of chief, he outlined, "enhancement of operational capability" to protect "nation's sovereignty and integrity at any cost."

With the ongoing standoff in Eastern Ladakh, the IAF has been playing a crucial role. And, the deployment and change in the format of war is pushing the country to strengthen the other realms of the force like Unmanned Combat and Space.

"We are heading towards a major role of the missiles and drones, both armed and unarmed. Though we have done well in missiles and helicopters, we are lagging in drone systems which are going to play a significant part of the future of air warfare," says a senior IAF officer on the condition of anonymity.

Also, the new air chief will be overseeing the Defence Space Agency (DSA), set up in May 2019, in its initiative to get fully operational.

Comprising members from the Army, Navy and Air Force, the DSA is envisaged to gradually take over the space-related capabilities of the three armed forces.

Meanwhile, Air Marshal Dilip Kumar Patnaik on Sunday assumed charge as chief of Eastern Air Command.

Space significance

The significance of space was highlighted during the first in-person meeting of the Quad group in Washington on September 24.

India is deepening its space ties with the US, Japan and Australia — the other three member nations of the group.

https://www.newindianexpress.com/nation/2021/oct/04/new-air-chief-should-focus-on-iafs-indigenous-projects-suggestexperts-2367297.html

Sat, 02 Oct 2021

Akash Missile: 2 advanced versions- everything you need to know now

By Simerleen Kaur

In a world that is constantly developing, weaponry like Akash missile the security of a nation is a must. A country has to develop its infrastructure as well as its defence structure in order to properly grow.

Rising investments can never alone provide the boost to the development of the country and hampers its scope for competing worldwide, therefore making the development of defence structure of the country a strong requirement too. The world knows how strong the Indian army is and we all have heard the brave stories of them.

We know how many battles they have won with their bravery and this is what makes them better than anyone else. However, it would weaken their powers if the country does not invest in projects related to the development of the defence structure, such as new missiles, pieces of machinery and other services, which is not good at all.

Unwanted threat from our neighbour enemies lies above our head all the time and therefore weakening of the defence system of the country is not affordable at all. In this article, we will be discussing one such addition to our defence system, which has recently been tested by the Defence Research and Development Organisation (DRDO). What is the addition, how was the testing and everything else? Let's discuss as we go ahead.

Akash missile prime

The Defence Research and Development Organisation (DRDO) of the country recently tested out the maiden flight test of the new version of the very popular Akash Missile- the Akash prime. This test took place on Monday, which is several months after one other version of the Akash missile- Akash NG (New Generation) was tested in the month of January. Before comparing the new versions with the older versions in order to know what has changed, let us first know about the Akash missile.

The development of the Akash SAM goes back to the late 1980s. The development started this early as a part of a scheme- The Integrated Guided Missile Development Programme. After the development, the initial system trials and field trials along with target neutralisation trials in the late 1990s and 2000s. Further, they were followed by extensive trials by both the Indian Air Force and the Indian Army.

Talking about its name, the Akash missile is named after the Sanskrit word meaning sky or space. It is basically a Short Range Surface to Air Missile which is built in order to provide air defence cover to the most vulnerable areas. The Akash missile is very efficient and can simultaneously engage multiple targets in group mode or autonomous mode, making it better than many other missiles.

Moreover, the missile has a built-in Electronic Counter-Counter Measures (ECCM) feature. What does this feature mean? This simply means that the missile has mechanisms onboard that can counter the electronic systems that can deceive the detection system, all by itself. This provides an edge to the efficiency of the missile and makes it better than other missiles.

Talking about the configuration system, it is entirely based on a mobile platform. A complete system of the Akash missile involves a launcher, set of missiles, control system, a built-in mission

guidance system and a C4I. Further, it requires a supporting ground system and also a radar named Rajendra which accompanies each of the missile batteries.

Regarding the current use of the missile, following the introduction of the earlier version of the Akash missile in 2010, the Indian Air Force and Indian Army currently operate multiple squadrons and groups of missiles respectively. Following this, some more are still in the pipeline. What amazes me the most is that this missile widely encourages indigenousness. As per the data provided by the Defence Ministry of the nation, the Akash missile is 96% indigenous, which is one of the highest proportions of indigenisation.

The missile has been so great in its working that many countries have now also shown their keen interest in this missile, and therefore the government had to allow the export of this missile too many other countries too in December 2020. The interest in this missile was widely developed in international exhibitions and therefore the export prospects of the missile rose by great numbers. Let us now discuss the new models of the missile- Akash Prime and Akash NG.

Akash Prime and Akash NG

The initial version of the Akash Missile has a range of nearly 27-30 Km and a flight altitude of nearly 18 Km. This has been improved in the recently developed versions of the Akash missile. Akash Prime, which recently went its Maiden Flight test on Monday in the Integrated Test Range, Odisha has almost the same range as the previous version but has a very significant new addition to it, which is an indigenous active Radio Frequency. How does it help, if you are wondering?

The radiofrequency helps in achieving better accuracy at aerial targets. Moreover, other important improvements in the system involve achieving more reliable performance under low-temperature environments at higher altitudes. Why are these new additions made? These new additions are made after receiving suggestions from the Indian Air Force and the Indian Army for the deployment of the system to provide Air Defence cover for vital installations and the danger prone areas in the high altitude regions. The new additions to the missile definitely provide an edge to it over other missiles and improve the defence system of the nation.

Talking about the Akash NG, it was successfully tested through a maiden launch on the 25th of January. The Akash NG is a new generation SAM, which is primarily designed for the Indian Air Force. The basic aim of this missile is intercepting high manoeuvring aerial threats which have low Radar Cross Section, which is basically the electromagnetic signature of the object. Moreover, it has a greater range as compared to the original Akash missile.

The range of this new Akash NG measures nearly up to 70km, which is very high as compared to the earlier version. Moreover, this missile is much sleeker, lighter and has a much smaller ground system footprint. Along with this, the missile has a higher lethality of striking threats, making it much better for the Indian Air Force.

Moreover, there is an additional feature in the Akash NG and it is that this missile is cauterised. This means that the missile can be stored and operated from special compartments only. In the canister, the inside environment is controlled thus along with making its transport and storage easier, the shelf life of the missile also improves significantly. The beginning of the development of both the missiles started in the mid-2010s. This was the time when the earlier version of the missile was being inducted into the Air Force and the Army.

This should be kept in our minds that both the missiles are highly indigenous, which is very significant in promoting indigenousness in the country. Moreover, the development of the new missiles has a very high potential to influence the inflow of foreign exchange from many countries, as the demand for Akash missiles is very high in many of the countries. Therefore, this will also benefit the reviving economy of the country along with providing an enhancement in the defence system of the nation.

https://www.inventiva.co.in/business/corporate/simarleen/akash-missile/

EASTERN MIRROR

Sat, 02 Oct 2021

IUN to collaborate with NESAC

By Livine Khrozhoh

Dimapur, Oct. 1 (EMN): ICFAI University Nagaland (IUN), Dimapur, has announced to collaborate with North Eastern Space Application Centre (NESAC) to work out different programmes including Earth Science and GIS and remote sensing, agriculture sciences and environment and climate studies.

This was informed by the vice chancellor, Arun Kumer Verma on Friday. He stated that the university would be working out different professional courses in collaboration with the department of space where the scientist of NESAC centre would be the faculty. He added that students would be sent for four months internship programme in a specialised area and be assigned real time project task to enable them get better opportunity for employment in the industry.

He said that KK Sarma, Scientist-SG and director in-charge of NESAC, department of Space, Meghalaya, has assured them to start the course on Earth Science and Remote Sensing.

With the conclusion of a four-day orientation programme of various departments in the university, he shared with Eastern Mirror that they have interfaced with different organisations added that ICFAI university would be working together with Indian Space Research Organisation (ISRO), Defence Research and Development Organisation (DRDO), international organisations and national institutions "for the development of Nagaland and generate industry oriented employable manpower which will bring development to the state of Nagaland".

"ISRO and DRDO have come forward to provide training to our students as well as they are going to involve in many collaborative programme with us," he said. He expressed his desire to make the university a centre of excellence in the field of earth science and remote sensing activities.

He also shared that they will be sending students to Xavier Institute of Management and Entrepreneurship, Bangalore, for internship.

The director of System Analyst Group from DRDO, Ministry of Defence, New Delhi, Jayshanthi also assured internship for the students at DRDO laboratory. Speaking about the university, he stated that Jai Singh Parihar, who is a renowned agriculturalist, was interested to start courses Environmental Science in the university.

S Venugopal, director of National Institute of Technology (NIT), Dimapur, has signed an MoU with ICFAI University Nagaland in respect of research projects, he informed.

He also updated that they would start the Agriculture and Forestry course in the university from the next batch.

On the fourth day of the orientation programme on Friday, Manoj Sharma, scientist and additional director of Solid State Physics Laboratory, DRDO, stressed on the importance of Humanities and Social Science and urged the students to work hard and develop their areas.

Rajesh Uppal, director and founder of International Defence Security Technology Inc, San Hose, California, and the founder of US India Science and Technology for Security (USISTS), also stressed on the importance of technology.

Lanusangla Tzudir, managing director of Heritage Publication House, also encourages the students to focus on methodologies.

"We need to have an evolving hunger for learning when we embark on a journey of pursuing further education," she said. She further urged the student to develop responsible leadership, creating responsible citizenship, social values and sustainable growth, leadership in business and industries not only for themselves but for the communities and country.

Lanusangla Tzudir, Arun Kumer Verma along with other faculty of ICFAI University in Dimapur on October 1. (EM Images)

https://easternmirrornagaland.com/iun-to-collaborate-with-nesac/

प्रभात खबर

Sat, 02 Oct 2021

झारखंड हाईकोर्ट, विधानसभा और राजभवन लगेंगे उच्च तकनीक के मेटल डिटेक्टर, जानें कैसे करेगा काम यह

राजधानी रांची के प्रमुख भवनों की सुरक्षा होगी हाइटेक। हाइकोर्ट, विधानसभा और राजभवन में लगेंगे उच्च तकनीक के मेटल डिटेक्टर

रांची: झारखंड हाइकोर्ट, प्रोजेक्ट भवन, विधानसभा, राजभवन, पुलिस मुख्यालय और मुख्यमंत्री आवास की सुरक्षा हाइटेक होगी। सभी भवनों के प्रवेश द्वार (जहां से व्यक्ति अंदर प्रवेश कर सकता है) पर उच्च तकनीक के मेटल डिटेक्टर (High Tech Metal Detector) लगाये जायेंगे। यानी ये मेटल डिटेक्टर (Metal Detector) किसी की नजर में नहीं आयेंगे।

झारखंड हाईकोर्ट , विधानसभा और राजभवन लगेंगे मेटल डिटेक्टरफाइल फोटो.

मौजूदा समय में उक्त स्थानों पर जो डोर मेटल डिटेक्टर (डीएफएमडी) (dfmd) लगाये गये हैं, वह दिखायी पड़ते हैं। इनकी ऊंचाई छीट और चौड़ाई तीन फीट होती है। बहुत से लोग इससे होकर गुजरने के बजाय बगल से निकल जाते हैं। ऐसे में उक्त स्थानों की सुरक्षा में खतरा उत्पन्न हो सकता है। इसी को देखते हुए पुलिस मुख्यालय ने उच्च तकनीक वाले मेटल डिटेक्टर लगाने का प्रस्ताव तैयार किया है। इस प्रस्ताव को सरकार के पास भेज दिया गया है।

डीआरडीओ से मांगे गये सुझाव

वीवीआइपी सिक्यूरिटी के संदर्भ में पुलिस मुख्यालय ने डीआरडीओ (DRDO) (रक्षा अनुसंधान एवं विकास संगठन) से सुझाव मांगा है। डीआरडीओ को भेजे पत्र में पूछा गया है कि सरकार के प्रमुख भवनों और वीवीआइपी की सुरक्षा को लेकर किस तरह के सुरक्षा उपकरणों का इस्तेमाल किया जाना चाहिए। गौरतलब है कि प्रमुख संस्थानों और वीवीआइपी सुरक्षा में अत्याधुनिक और उपयोगी उपकरणों का इस्तेमाल कैसे किया जाये, इस संबंध में डीआरडीओ संबंधित राज्यों को जानकारी उपलब्ध कराता है। उसी आधार पर राज्यों की ओर से संबंधित उपकरणों की खरीद समय-समय पर की जाती है।

ऐसे काम करेगा मेटल डिटेक्टर

अगर कोई व्यक्ति हथियार, बम, विस्फोटक व तय मात्रा से ज्यादा मात्रा में धातु लेकर इन जगहों पर प्रवेश करने की कोशिश करेगा, तो अदृश्य मेटल डिटेक्टर की जद में आयेगा। डिटेक्टर से आवाज निकलेगी। इससे वहां तैनात सुरक्षाकर्मी सतर्क हो जायेंगे और उस व्यक्ति की पड़ताल करेंगे।

इसके अलावा कंट्रोल रूम में बैठा सुरक्षा पदाधिकारी भी सीसीटीवी कैमरे के जरिये उस व्यक्ति को देख सकेगा। वह भी अपने स्तर से मेटल डिटेक्टर के समीप तैनात सुरक्षाकर्मियों को निर्देश देने के साथ ही दूसरे सुरक्षाकर्मियों को भी तत्काल चौकस करेगा, ताकि सुरक्षा में तैनात पुलिसकर्मी उक्त संदिग्ध गतिविधि वाले व्यक्ति के खिलाफ त्वरित कार्रवाई कर सके।

- **मुख्यमंत्री आवास, प्रोजेक्ट भवन और पुलिस मुख्यालय में भी लगाये जायेंगे उच्च तकनीक वाले मेटल डिटेक्टर**
- **कंट्रोल रूम से सीसीटीवी के जरिये रखी जायेगी नजर**
- **पुलिस मुख्यालय ने प्रमुख भवनों की सुरक्षा को लेकर प्रस्ताव तैयार कर सरकार के पास भेजा**

https://www.prabhatkhabar.com/state/jharkhand/ranchi/jharkhand-high-court-vidhan-sabha-and-raj-bhavan-equipped-with-high-tech-metal-detectors-know-how-it-will-work-srn

UNI BREVITY ACCURACY SPEED United News of India India's Multi Lingual News Agency

Sun, 03 Oct 2021

Visakhapatnam: NSTL celebrates Gandhi, Lal Bahadur Jayanti

Visakhapatnam, Oct 2 (UNI) The Naval Science and Technological Laboratory (NSTL) celebrated the birth anniversary of Mahatma Gandhi and Lal Bahadur Shastri here on Saturday.

NSTL is an Indian defence laboratory of the Defence Research and Development Organisation (DRDO) and it was established to undertake research and development of major naval systems and underwater weapons for the Indian Navy to make it self-reliant.

In his address on the occasion, NSTL Director and Outstanding Scientist Dr Y Sreenivas Rao described Gandhiji as an innovator and as a scientist.

He explained how Gandhiji innovatively used Satyagraha as the weapon in freedom fighting and how he scientifically gathered people without using any social media in those olden days.

Also, he applauded the contributions of Lal Bahadur Shastri in building a strong nation.

On this occasion, financial assistance of Rs.15,000was donated to Manasu Orphanage Home, Prahladapuram in the city.

Senior scientists PVS Ganesh Kumar, BVSS Krishna Kumar, Dr A Srinivas Kumar, Dr Manu Korulla, Dr GV Krishna Kumar; union leaders CHVSN Murthy, Chandrasekhar, Roni Nath, Hemant Bais, and officers and staff of NSTL participated and paid floral tributes.

http://www.uniindia.com/visakhapatnam-nstl-celebrates-gandhi-lal-bahadur-jayanti/south/news/2523192.html

THE TIMES OF INDIA

Sat, 02 Oct 2021

Gadkari bats for shift to alternative sources of fuel

By Shiladitya Pandit

Pune: Union road transport and highways minister Nitin Gadkari, speaking at the valedictory session of the Symposium on International Automotive Technology (SIAT) 2021, urged manufacturers to focus on salvage from scrapped vehicles to tide over the global semiconductor shortage.

He also asked Automotive Research Association of India (ARAI), organisers of the symposium, to help state transport agencies, many of which are in the red due to the rising fuel costs, to shift to more efficient and cheaper alternative sources.

"Hydrogen fuel development is very important to mobility. The government has already notified standards for fuel cells and retrofitting, including for long-run vehicles. The cost of retrofitting vehicles is around Rs 10 lakh, which is recoverable within 295 days. ARAI should set up an ecosystem to help state transport agencies with the conversion of their fleets to alternative fuels, such as electricity, hydrogen, bio-CNG, ethanol, and others, as it would result in huge savings," Gadkari said.

He also asked ARAI to work with Defence Research and Development Organisation (DRDO) and Indian Space Research Organisation (ISRO) — which are working to develop indigenous clean energy and energy storage solutions — to develop "long-life, low-cost, high-efficiency" EV batteries.

Gadkari also emphasized the need to use ethanol in mobility and follow the example of countries such as Brazil, which he said has one of the cleanest energy matrices in the world.

"The use of ethanol in vehicles should be encouraged, and we want to introduce flex-fuel engines, which can run on petrol blended with ethanol. It emits significantly less greenhouse gases. ARAI should develop BS-VI or Euro-VI equivalent flex-fuel engines," Gadkari further added.

https://timesofindia.indiatimes.com/city/pune/gadkari-bats-for-shift-to-alternative-sources-of-fuel/articleshow/86691594.cms

COVID 19: DRDO's Contribution

THE HINDU BusinessLine

Sat, 02 Oct 2021

Covid drug manufacturing tech passed on to pharma companies: DRDO Chief

DCGI has already given the green light to these companies to go ahead with production

Indore: Defence Research and Development Organisation (DRDO) Chairman G Satheesh Reddy on Friday said the technological information needed for the manufacture of 2DG, a drug developed by the organisation to treat Covid-19, has been transferred to several pharmaceutical companies.

"2DG was developed in DRDO's Gwalior laboratory. We have transferred the manufacturing technology to seven to eight companies. Drugs Controller General of India (DCGI) has given the green light to these companies to go ahead with production," Reddy said at a program here.

ATAG system

He also said that the DRDO, with TATA Advanced Systems and Bharat Forge, has developed an advanced towed artillery gun system (ATAGS) 155 mm howitzer with the highest hitting range in the world.

Its trials have been completed and the guns would be handed over to the Army in the coming days, he said.

https://www.thehindubusinessline.com/news/covid-drug-manufacturing-tech-passed-on-to-pharma-companies-drdo-chief/article36787914.ece

पंजाब केसरी

Sat, 02 Oct 2021

DRDO ने फार्मा कंपनियों को दी "2 डीजी " की तकनीकी, कई मरीजों तक पहुँच सकेगी दवा

Edited By Pradeep

नेशनल डेस्क: रक्षा अनुसंधान एवं विकास संगठन (डीआरडीओ) के प्रमुख जी. सतीश रेड्डी ने शुक्रवार को कहा कि कोविड-19 के इलाज के लिए डीआरडीओ द्वारा विकसित दवा "2 डीजी" की निर्माण तकनीकी फार्मा कम्पनियों को अंतरित की गई है ताकि यह औषधि ज्यादा से ज्यादा मरीजों तक पहुंच सके।

उन्होंने इंदौर में आयोजित एक कार्यक्रम में कहा, "मैं आपको बताना चाहूंगा कि 2 डीजी को डीआरडीओ की ग्वालियर स्थित प्रयोगशाला में विकसित किया गया है। हमने कोविड-19 की यह दवा बनाने की तकनीकी सात-आठ फार्मा कम्पनियों को अंतरित की है और भारत के औषधि महानियंत्रक (डीसीजीआई) ने इन कम्पनियों को इसके उत्पादन की मंजूरी भी दे दी है।"

रेड्डी ने कहा कि डीआरडीओ की ग्वालियर स्थित प्रयोगशाला ने कोविड-19 के खिलाफ जंग में अहम भूमिका निभाई है और महामारी के भारी प्रकोप के वक्त इसमें बेहद कम समय में सैनिटाइजर, मास्क और निजी सुरक्षा उपकरण (पीपीई किट) भी विकसित किए गए हैं। डीआरडीओ प्रमुख, रक्षा उपकरणों के विनिर्माण के क्षेत्र में मध्य प्रदेश के उद्यमियों के लिए मौजूद संभावनाओं पर केंद्रित कार्यक्रम को संबोधित कर रहे थे। यह कार्यक्रम राज्य सरकार ने आयोजित किया था जिसमें छोटे उद्योगपतियों ने बड़ी तादाद में हिस्सा लिया।

रेड्डी ने कार्यक्रम में बताया कि डीआरडीओ द्वारा भारत फोर्ज और टाटा एडवांस्ड सिस्टम्स के साथ मिलकर विकसित "एटैग्स" 155 एमएम श्रेणी में तोपखाने का सबसे ज्यादा दूरी तक मार करने वाली बंदूक है और दुनिया भर में इसकी यह मारक क्षमता केवल भारत के पास है। उन्होंने बताया कि "एटैग्स" का परीक्षण पूरा हो चुका है और आने वाले दिनों में इसे सैन्य बलों को सौंपा जाएगा। रेड्डी ने जोर देकर कहा कि डीआरडीओ अलग-अलग सरकारी योजनाओं के जरिये कोशिश कर रहा है कि रक्षा उपकरणों के आयात पर न केवल भारत की निर्भरता कम हो, बल्कि देश से इनके निर्यात को भी बढ़ावा मिले।

उन्होंने कहा, "भारत में 1980 के दशक के दौरान एपीजे अब्दुल कलाम के नेतृत्व में जब मिसाइल विकास कार्यक्रम शुरू किया गया था, तब देश में इस परियोजना में मददगार औद्योगिक इकाइयों की तादाद केवल 50 के आस-पास रही होगी। लेकिन इन दिनों रक्षा उपकरणों के विनिर्माण में अलग-अलग श्रेणियों में करीब 12,000 घरेलू कारखाने मदद कर रहे हैं जिससे भारतीय सैन्य बलों को उन्नत उपकरण जल्द से जल्द सौंपे जा रहे हैं।"

कार्यक्रम में मध्य प्रदेश के सूक्ष्म, लघु एवं मध्यम उद्यम (एमएसएमई) मंत्री ओमप्रकाश सखलेचा के अनुरोध पर रेड्डी ने घोषणा की कि डीआरडीओ की ग्वालियर स्थित प्रयोगशाला के जरिये राज्य के उन उद्यमियों की हरसंभव मदद की जाएगी जो रक्षा उपकरणों के विनिर्माण के क्षेत्र में आने के इच्छुक हैं।

https://www.punjabkesari.in/national/news/drdo-gave-technology-of-2-dg-to-pharma-companies-1466739

प्रभात खबर

Sat, 02 Oct 2021

DRDO ने 2-डीजी दवा की तकनीक फार्मा कंपनियों को सौंपी, जानें खासियत

डीआरडीओ के प्रमुख जी सतीश रेड्डी ने कहा कि कोविड-19 के इलाज के लिए डीआरडीओ द्वारा विकसित दवा 2 डीजी की निर्माण तकनीक फार्मा कनियों को सौंपी जा रही है ताकि यह दवा ज्यादा से ज्यादा मरीजों तक पहुंच सके।

रक्षा अनुसंधान एवं विकास संगठन (डीआरडीओ) ने कोविड 19 के मरीजों का इलाज करने के लिए विकसित की गयी दवा 2डीजी की तकनीक फार्मा कंपनियों को सौंपने का फैसला किया है। यह जानकारी पीटीआई न्यूज के हवाले से मिली है।

DRDO 2DG Twitter

डीआरडीओ के प्रमुख जी सतीश रेड्डी ने कहा कि कोविड-19 के इलाज के लिए डीआरडीओ द्वारा विकसित दवा 2 डीजी की निर्माण तकनीक फार्मा कनियों को सौंपी जा रही है ताकि यह दवा ज्यादा से ज्यादा मरीजों तक पहुंच सके।

उन्होंने इंदौर में आयोजित एक कार्यक्रम में कहा कि 2 डीजी दवा को डीआरडीओ की ग्वालियर स्थित प्रयोगशाला में विकसित किया गया है। उन्होंने बताया कि कोविड-19 की यह दवा बनाने की तकनीकी सात-आठ फार्मा कंपनियों को सौंपी गयी है।

भारत के औषधि महानियंत्रक (डीसीजीआई) ने इन कंपनियों को इसके उत्पादन की मंजूरी भी दे दी है। रेड्डी ने कहा कि डीआरडीओ की ग्वालियर स्थित प्रयोगशाला ने कोविड-19 के खिलाफ जंग में अहम भूमिका निभाई है और महामारी के भारी प्रकोप के वक्त इसमें बेहद कम समय में सैनिटाइजर, मास्क और पीपीई किट भी विकसित किये थे।

2 डीजी दवा की खासियत

2 डीजी की विशेषता यह है कि इसे इस्तेमाल करना बहुत ही आसान है। यह एक सैशे में मिलता है जिसे बस घोलकर पीना होता है। वैज्ञानिकों का दावा है कि इसके प्रयोग से मरीजों में रिकवरी जल्दी होती है और उन्हें आॅक्सीजन की जरूरत भी कम पड़ती है। 2डीजी दवा की डोज पांच से सात दिन की होती है और इसे ग्लूकोज की तरह पीया जाता है।

https://www.prabhatkhabar.com/national/drdo-handed-over-the-technology-of-2g-medicine-to-pharma-companies-rjh

THE NEW INDIAN EXPRESS

Sun, 03 Oct 2021

Sense and essence

Aromatherapist Rupal Shabnam Tyagi has collaborated with DRDO to launch essential oil hand sanitisers

By Mallik Thatipalli

The government-run Defence Research and Development Organisation (DRDO) is not known for making hand sanitisers. Seised by the current alternate health trend, it has collaborated with Rupal Shabnam Tyagi, a qualified aromatherapy practitioner from London, to launch a new essential oil hand sanitiser. She says that aromatherapy de-stresses and rids health issues in a natural and holistic way.

Rupal Shabnam Tyagi

Previous to this, she had established Wika, a pagan magick system, ostensibly India's first aromatherapy clinic in New Delhi, five years ago, to cure serious ailments like fibromyalgia, arthritis, PMS, body pain, sports injuries, migraines and arthritis, and provide post-operative care. With a heady mix of aromatherapy and Ayurveda that uses oils, herbs and potions, her wellness studio claims to make lasting lifestyle changes. Tyagi also addresses less serious but widely prevalent afflictions like acne and hair fall.

"Modern medicines deposit toxins and have side-effects," she says, adding, "Aromatherapy uses different oils, which have affinity to specific parts of the body and can cause positive transformation of the mind too." For example, stomach disorders are treated with mint and rosemary oil, and musculoskeletal issues with lavender and chamomile oil.

Tyagi's most sought-after blends are for bridal treatment, face serums, for rheumatoid arthritis, and handling lifestyle diseases such as fibromyalgia—musculoskeletal pain, in addition to sleep, memory and mood shifts. She explains, "Bridal blends are sought after by girls a couple of months before their wedding.

We revived beauty techniques of royal harems who used ingredients such as cloves and cinnamon to exfoliate and rejuvenate the skin. Jasmine Sambac oil is good for beauty sleep and glow." For serious issues, lymphatic draining massages, which eliminate salt deposits from the body, or knuckling massages are recommended.

https://www.newindianexpress.com/lifestyle/health/2021/oct/03/sense-and-essence-2365970.html

INDIA TODAY

Sun, 03 Oct 2021

India Today Healthgiri Awards 2021 announced: Full list of winners

The India Today Healthgiri Awards 2021 were presented to salute the invincible spirit of corona warriors. Here's the complete list of winners:

New Delhi: The India Today Healthgiri Awards 2021 were presented in Delhi on Gandhi Jayanti to salute the invincible spirit of corona warriors who have led the battle against the Covid-19 pandemic.

The Healthgiri Awards 2020 is the reincarnated version of the India Today Safaigiri Awards, held annually on October 2.

The India Today Healthgiri Awards were given away by Mansukh Mandaviya, Union Minister for Health & Family Welfare, and Aroon Purie, Chairman and Editor-in-Chief, India Today Group.

Winners of India Today Healthgiri Awards 2021 | Photo by Chandradeep Kumar

Here's the complete list of winners:

BEST GOVERNMENT HOSPITAL COMBATING COVID-19

-> Lok Nayak Hospital, Delhi

BEST PRIVATE HOSPITAL COMBATING COVID-19

-> Kalinga Institute of Medical Sciences, Bhubaneswar

BEST CHARITY HOSPITAL COMBATING COVID-19

-> Topiwala National Medical College and B.Y.L. Charitable Hospital, Mumbai

BEST NGO OR OTHER ENTITY OFFERING HEALTH CARE SERVICES DURING COVID-19

-> Indo-Global Social Service Society, New Delhi

BEST INNOVATION FOR COVID RELATED ACTIVITY IN THE TIMES OF COVID

-> Defence Research and Development Organisation (DRDO), Delhi

BEST STATE COMBATING COVID-19

-> Karnataka

CELEBRITY WHO HAS DONE EXEMPLARY WORK DURING COVID-19

-> Akshay Kumar & Twinkle Khanna

BEST FAR-REACHING CORPORATE CONTRIBUTION FOR A WIDER SOCIAL IMPACT

-> Wipro Ltd., Bengaluru

BEST AMBULANCE SERVICE

-> HelpNow, Mumbai

BEST OXYGEN DELIVERY INITIATIVE

-> Delhi Sikh Gurdwara Management Committee, New Delhi

BEST OXYGEN DELIVERY INITIATIVE

-> SaveLIFE Foundation, New Delhi

BEST VACCINATION DRIVE BY A STATE

-> Gujarat

BEST VACCINATION DRIVE BY A STATE

-> Kerala

BEST VACCINE DELIVERY PROGRAMME BY PRIVATE HOSPITAL

-> Sir HN Hospital Trust, Mumbai

BEST VACCINE DELIVERY PROGRAMME BY PRIVATE HOSPITAL

-> Narayana Health (Narayana Hrudayalaya Limited), Bangalore

SPECIAL AWARD FOR ASSISTANCE IN LAST RITES

-> Shaheed Bhagat Singh Sewa Dal, New Delhi

BEST MENTAL HEALTH COUNSELLING

-> The Cyrus & Priya Vandrevala Foundation, Mumbai

BEST CHILD CARE/SUPPORT

-> World Vision India, Chennai

BEST DISTRICTS IN COMBATING COVID-19

-> Ghaziabad, Uttar Pradesh

BEST DISTRICTS IN COMBATING COVID-19

-> Faridabad, Haryana

UNSUNG HEROES

-> Guruprasad Mohapatra, Delhi

Special Award for Vaccine Manufacturing

-> Bharat Biotech, Hyderabad

Special Award for Vaccine Manufacturing

-> Serum Institute of India, Pune

https://www.indiatoday.in/india/story/india-today-healthgiri-awards-2021-announced-full-list-of-winners-1860109-2021-10-03

DRDO on Twitter

A. Bharat Bhushan Babu @SpokespersonMoD · 2h

Raksha Mantri Shri @rajnathsingh to felicitate 'Dare to Dream 2.0' Award winners and Young Scientists of @DRDO_India on October 4, 2021. Follow us at @SpokespersonMoD to catch the event live. @rajnathsingh @adgpi @PIB_India @indiannavy @IAF_MCC @drajaykumar_ias @AjaybhattBJP4UK

Defence News

Defence Strategic: National/International

Press Information Bureau
Government of India

Ministry of Defence

Fri, 01 Oct 2021 1:36PM

Air Marshal Sandeep Singh AVSM VM assumes the appointment of Vice Chief of the Air Staff

Air Marshal Sandeep Singh AVSM VM took over as Vice Chief of the Air Staff (VCAS) on 01 Oct 21. An alumnus of National Defence Academy, the Air Marshal was commissioned in the flying branch of IAF in Dec 1983 as a Fighter pilot. The Air Officer is an Experimental Test Pilot and a Qualified Flying Instructor. He has rich and diverse experience in operational and experimental test flying on various types of fighter aircraft and has flown about 4400 hours.

During his nearly thirty eight years of service in the IAF, the Air Marshal has held numerous important command and staff appointments. He has commanded Aircraft and Systems Testing Establishment, a frontline air base and an operational fighter squadron. He has held the appointments of Assistant Chief of the Air Staff (Plans), Senior Air Staff Officer at HQ Eastern Air Command and Deputy Chief of the Air Staff at Air Headquarters. Prior to assuming the current appointment, he held the appointment of AOC-in-C South Western Air Command.

The Air Marshal is a recipient of Ati Vishisht Seva Medal and Vishisht Seva Medal.

https://pib.gov.in/PressReleasePage.aspx?PRID=1759916

पत्र सूचना कार्यालय
भारत सरकार

रक्षा मंत्रालय

Fri, 01 Oct 2021 1:36PM

एयर मार्शल संदीप सिंह एवीएसएम वीएम ने वायुसेना उप प्रमुख का पदभार संभाला

एयर मार्शल संदीप सिंह एवीएसएम वीएम ने 1 अक्टूबर 2021 को वायुसेना के उप प्रमुख (वीसीएएस) के रूप में पदभार ग्रहण किया। वह राष्ट्रीय रक्षा अकादमी के पूर्व छात्र हैं, एयर मार्शल को दिसंबर 1983 में एक लड़ाकू पायलट के रूप में भारतीय वायुसेना की फ्लाइंग ब्रांच में कमीशन प्रदान किया गया था। वायु अधिकारी एक एक्सपेरिमेंटल टेस्ट पायलट और एक क्वालिफाइड फ्लाइंग इंस्ट्रक्टर हैं। उनके पास विभिन्न प्रकार के लड़ाकू विमानों पर अभियानगत और प्रायोगिक परीक्षण उड़ान का समृद्ध और विविध अनुभव है और उन्होंने लगभग 4400 घंटे की उड़ान भरी है।

भारतीय वायुसेना में अपनी लगभग अड़तीस वर्षों की सेवा के दौरान एयर मार्शल अनेक महत्वपूर्ण कमांड और स्टाफ प्रभारों पर रहे हैं। उन्होंने एयरक्राफ्ट एंड सिस्टम्स टेस्टिंग इस्टैब्लिशमेंट, एक फ्रंटलाइन एयर बेस और एक ऑपरेशनल फाइटर स्क्वाड्रन की कमान संभाली है। उन्होंने वायु सेना के सहायक प्रमुख (योजना), मुख्यालय पूर्वी वायु कमान में सीनियर एयर स्टाफ ऑफिसर तथा वायु मुख्यालय में वायुसेना उप प्रमुख की कमान संभाली हैं। वर्तमान नियुक्ति संभालने से पहले, उन्होंने एओसी-इन-सी दक्षिण पश्चिमी वायु कमान की ज़िम्मेदारी संभाली थी।

एयर मार्शल अति विशिष्ट सेवा पदक और विशिष्ट सेवा पदक प्राप्तकर्ता हैं।

https://pib.gov.in/PressReleasePage.aspx?PRID=1759998

Press Information Bureau
Government of India

Ministry of Defence

Fri, 01 Oct 2021 4:40PM

Air Marshal Amit Dev AVSM VSM ADC assumes Command of Western Air Command

Air Marshal Amit Dev AVSM VSM ADC assumed the appointment of Air Officer Commanding in Chief (AOC-in-C) of Western Air Command on 01 Oct 21. An alumnus of National Defence Academy, the Air Marshal was commissioned in the flying branch of IAF in Dec 1982 as a Fighter pilot. A Fighter Strike Leader, the Air Officer has about 2500 hours of operational flying experience on a wide variety of fighter aircraft in the inventory of IAF.

During nearly thirty nine years of service in the IAF, the Air Officer has held numerous important command and staff appointments. He has commanded a MiG-21 Squadron, a frontline Air Base, an Air Defence Direction Centre and an Operational Fighter Base. He has tenanted the appointments of Assistant Chief of the Air Staff (Inspection), Director General Air Operations and Air Officer in Charge Personnel at Air Headquarters. Prior to assuming the current appointment, he held the appointment of AOC-in-C Eastern Air Command.

The Air Marshal is a recipient of Ati Vishisht Seva Medal and Vishisht Seva Medal. He was appointed as the honorary Aide-de-Camp (ADC) to the Hon'ble President of India on 01 Aug 21.

https://pib.gov.in/PressReleasePage.aspx?PRID=1759989

पत्र सूचना कार्यालय
भारत सरकार

रक्षा मंत्रालय

Fri, 01 Oct 2021 4:40PM

एयर मार्शल अमित देव एवीएसएम वीएसएम एडीसी ने पश्चिमी वायु कमान की कमान संभाली

एयर मार्शल अमित देव एवीएसएम वीएसएम एडीसी ने 1 अक्टूबर 2021को पश्चिमी वायु कमान के एयर ऑफिसर कमांडिंग इन चीफ (एओसी-इन-सी) की नियुक्ति ग्रहण की। राष्ट्रीय रक्षा अकादमी के पूर्व छात्र, एयर मार्शल को भारतीय वायु सेना (आईएएफ) की उड़ान शाखा में दिसंबर 1982 में फाइटर पायलट के रूप में कमीशन किया गया था। एक फाइटर स्ट्राइक लीडर के रूप में इस वायु सेना अधिकारी के पास आईएएफ की सूची में विभिन्न प्रकार के लड़ाकू विमानों पर लगभग 2500 घंटे का उड़ान का अनुभव है।

भारतीय वायु सेना में लगभग 39 वर्षों की सेवा के दौरान, वायुसेना अधिकारी ने कई महत्वपूर्ण कमांड और स्टाफ नियुक्तियाँ की हैं। उन्होंने मिग-21 स्क्वाड्रन, फ्रंटलाइन एयर बेस, एयर डिफेंस डायरेक्शन सेंटर और ऑपरेशनल फाइटर बेस की कमान संभाली है। उन्होंने वायुसेना मुख्यालय में सहायक वायुसेनाध्यक्ष (निरीक्षण), महानिदेशक वायु संचालन और एयर ऑफिसर इंचार्ज पर्सनेल का कार्यभार भी संभाला है। वर्तमान नियुक्ति संभालने से पहले, उन्होंने एओसी-इन-सी ईस्टर्न एयर कमान का पद भी संभाला है।

एयर मार्शल को अति विशिष्ट सेवा पदक और विशिष्ट सेवा पदक प्राप्त हो चुके हैं। उन्हें 1 अगस्त 2021 को भारत के माननीय राष्ट्रपति के मानद एड-डी-कैंप (एडीसी) के रूप में नियुक्त किया गया था।

https://pib.gov.in/PressReleasePage.aspx?PRID=1760098

Press Information Bureau
Government of India

Ministry of Defence

Sat, 02 Oct 2021 11:30AM

Indian contingent departs for Sri Lanka joint exercise Mitra Shakti 21

The 8th Edition of India Sri Lanka bilateral joint Exercise Mitra Shakti will be conducted at Combat Training School, Ampara in Sri Lanka from 4 to 15 October 2021.

An all arms contingent of 120 personnel of the Indian Army will participate in the exercise along with a battalion of the Sri Lankan Army. The aim of the exercise is to promote close relations between Armies of both countries and enhance inter-operability and sharing best practices in counter insurgency and counter terrorism operations.

The exercise will involve tactical level operations at sub unit level in an international Counter Insurgency and Counter Terrorism environment and will go a long way in further strengthening the relationship between both the South Asian Nations and will act as a catalyst in bringing synergy and cooperation at grass root level between both Armies.

The 7th Edition of Exercise Mitra Shakti was conducted at Foreign Training Node (FTN), Pune, Maharashtra (India) in 2019.

https://pib.gov.in/PressReleasePage.aspx?PRID=1760238

THE TIMES OF INDIA

Sun, 03 Oct 2021

Increased Chinese troop deployment a matter of concern, says Army Chief

New Delhi: In comments that came ahead of the next meeting of Indian and Chinese military commanders, Army chief Gen M M Naravane said the increase in Chinese troop deployment along the entire border is a matter of concern even as he expressed the hope that the 17-month confrontation in eastern Ladakh would be resolved in the days ahead.

The 13th round of corps commander-level talks between India and China is likely to be held next week, even as the People's Liberation Army (PLA) continues to consolidate its military positions along the frontier with heavy weaponry as well as upgrade its airbases facing India, which have resulted in matching deployments on the Indian side.

Gen Naravane said the increase in PLA deployments is in "considerable numbers" in forward areas all along the 3,488-km Line of Actual Control

Speaking to journalists in Leh, Gen Naravane said the increase in PLA deployments in "considerable numbers" in forward areas all along the 3,488-km Line of Actual Control, stretching from eastern Ladakh to Arunachal Pradesh, continues to be "a matter of concern for us". A day ago, he had noted that military face-offs will be inevitable until the border question is settled between the two countries.

Turning to the Line of Control, Gen Naravane said the situation is "regressing to pre-February days" with the Pakistan army supporting two infiltration attempts by terrorists through ceasefire violations in the last 10 days.

On the Chinese border, the Indian Army has also undertaken matching measures, both in terms of troop deployment as well as infrastructure development. "We have also inducted advanced weaponry. We are strong, quite well-poised to meet any eventuality," he said after reviewing the operational situation and preparedness in the high-altitude region. An agency report said he noted that the K9 self-propelled howitzer had been deployed with some changes in the Ladakh region to boost firepower though the weapon was essentially meant for the plains.

Indian and Chinese troops disengaged in the Pangong Tso-Kailash Range region in February and Patrolling Point-17A near Gogra in August, but the military stalemate over the other "friction points" at Hot Springs, Demchok and the strategically located Depsang Plains still continues.

Noting the situation has been "quite normal" at the friction points for the last six months, Gen Naravane said he hoped the disengagement process will be taken further in the 13th round of military talks. "By and by, all friction points will get resolved," Gen Naravane told ANI.

"When the talks had started, people were doubtful whether talks would resolve anything, but I am of the firm opinion that we can resolve our differences with dialogue and that is what has happened in the past few months," he added.

The Pakistan army earlier used to provide "covering fire" to terrorists trying to infiltrate into J&K but had stopped after agreeing to a fresh ceasefire in February this year. The support to infiltrating terrorists, however, has started once again.

"We have conveyed, through hotline messages and DGMO-level talks that take place every week, that they (Pakistan) should not give support to any terror-related activities," said Gen Naravane.

https://timesofindia.indiatimes.com/india/increased-chinese-troop-deployment-a-matter-of-concern-says-army-chief/articleshow/86718421.cms

The EurAsian Times

Sun, 03 Oct 2021

India-China tensions re-escalate; can S.Korean-origin K-9 Vajra 'Mow-Down' Chinese PLA?

By Nitin J Tticku

Amid re-escalating tensions with China, the Indian Army has deployed its first K-9 Vajra (Thunder) self-propelled howitzer regiment along the Ladakh border where it has been locked in a bitter standoff with the Chinese PLA for more than a year.

Indian K9 SPH at Ladakh during 2020–2021 China–India skirmishes

The K-9 Vajra, which has its origins in South Korea, is capable of striking enemy targets within a radius of around 50 kilometers. Its ammunition range varies from 18 to 54 km.

The Indian K-9 VAJRA-T is the localized version of the South Korean self-propelled 155mm/52cal Howitzer (SPH) 'K-9 Thunder' designed and developed by the Agency for Defense Development and Samsung Aerospace Industries. The weapon system is now manufactured by Hanwha Defense.

Besides India, K-9 is used by six other nations — Turkey, Australia, Estonia, Norway, Finland, and Egypt.

K-9 Vajra Self-Propelled Howitzer

K-9 Vajra is basically a howitzer on wheels. It is outfitted with its own propulsion system to move towards its firing position and can be utilized for long-range shelling on enemy positions.

K-9 Vajra or any other modern self-propelled artillery vehicles may outwardly resemble tanks however they are generally lightly-armored. They shield their operators against shrapnel and small arms and are usually included as armored fighting vehicles. Many are equipped with machine guns to counter enemy infantry.

The K-9's crew is guarded by an all-welded steel armor which is believed to endure 14.5 mm armor-piercing rounds, 152 mm shell fragments, and anti-personnel mines, and has overall nuclear, biological, and chemical protection.

The K9 has the ability to fire its shells in MRSI mode (Multiple Rounds Simultaneous Impact). In the MRSI mode, the K9 is able to fire three shells in under 15 seconds — 1 shell every 5 seconds — each in different trajectories so that all of the shells land at their target at the same time.

This is particularly effective in surprise bombardment tactics, especially against enemy fortifications and strongholds in the open.

It is also supplemented with an ammunition resupply vehicle, called the K-10. Built on the K9 platform, it shares the same chassis as K9, preserving K9's mobility, and can follow the main artillery battery without lagging behind.

The Indian Army Chief had words of high praise for Vajra. He said, "These guns can also work in high-altitude areas, field trials were extremely successful. We have now added an entire regiment, this will be really helpful."

Experts Speak On K9 Vajra

A former Director-General of Artillery told The EurAsian Times that the deployment of Vajra is a step in the right direction. Other military analysts echoed this view.

Major General Rana Goswami (Retd), who commanded the Indian Army's 105 mm Light Field Gun regiment, said, "It is a very good Artillery 155-mm gun-howitzer system. It is self-propelled and would generally be utilized along with armored formations in war. Faster to deploy and being tracked, it has the same mobility as tanks.

Major General VK Madhok (Retd), a veteran of the first course Joint Services Wing (JSW) described the K9 Vajra as a "highly effective piece of artillery which may prove to be a gamechanger!"

"It is a highly versatile, and lethal system which complements the employment of artillery in high-altitude areas. The deployment of these howitzers is a major boost to our troops deployed there.

The barrage of fire the K9 Vajra can rain down on the enemy makes it a nightmare for the PLA! The Vajra's presence will be felt and constantly prey on the adversary's mind. It will alter the dynamics in our favor," Maj. Gen. Madhok said.

According to Military author and analyst, Colonel Rajinder Singh Kushwaha (Retd) — with a range of 50 kilometers and effectively covering choke points and Concentration cum assembly areas, it can deliver a death blow to the enemy.

"Its computerized accuracy and lethality of ammunition would cause unacceptable damage to the attacker. The employment of three regiments along with Dhanush regiments is certainly a good display of firepower. It will rain death from the sky on enemy troops," he said.

Some analysts have indicated that plans are being finalized to order at least two more regiments worth of the K9 155mm/52 caliber howitzers for deployment in high-altitude areas of the mountains. It is believed that the process to work out the cost criteria for the additional 40 K9 Vajras is underway.

The Indian Army has already placed orders for the M777 lightweight howitzers for high altitudes. Compared to the K9 Vajra, the M777 lightweight howitzers can reach areas in mountainous terrain easily.

This is indicative that the K9 Vajra and the M777 are likely to complement each other and cover maximum ground and types of topography in the sensitive Ladakh region.

A Howitzer-Turned-Tank?

Former Director-General of Artillery, Lieutenant PR Shankar (Retd), proposed the conversion of the K9 Vajra into a tank.

"There are basically two options. First, use the K 9 Vajra hull and build a light tank on it. The second option is to up-gun a BMP and convert it into a light tank. I have grave doubts whether anything beyond a 40 mm gun can be mounted on a BMP. A 40 mm gun will be inadequate for the task," he wrote in an article.

"We are left with only one option. Luckily it is credible. However, within this, we have two choices. We can design and build a tank using the Vajra Hull and mating it with a 105/120 mm gun and turret.

We might come out with a prototype in about two years. Carry out trials for another two years…negotiate and place orders.

"The other option is to evolve into a light tank by down gunning the Vajra progressively in stages while increasing our combat power," the former DG Arty opined. The induction of the K9 Vajra has been widely accepted by Indian military leaders as being a step in the right direction," the General added.

K9 Vajra – Major Drawbacks

While the Vajra can be deployed for firing in just one minute, it isn't stable enough to be fired on the move like a tank. The system was extensively and successfully used by Turkish armed forces in Syria.

Turkey operates its T-155 Firtina, a locally manufactured version of the South Korean K-9 Thunder. The Firtinas are long-barreled 155 mm howitzers with a range of 30 to 40 kilometers depending on the ammunition.

The Firtinas were first deployed against PKK forces in Iraq in 2008. Later, they were used in the conflict in Syria. On April 30, 2016, ISIS released a video depicting AT-13 Metis-M anti-tank guided missiles knocking out three Firtinas.

"Like most self-propelled artillery, the Firtina's armor is for stopping shrapnel and small arms, not guided missiles — leaving one to wonder why the vehicles were in such an exposed position in the first place," Sebastien Roblin wrote in a piece for War Is Borning.

Nevertheless, the K9 has seen harsh combat environments in the Middle East and the cold climate of Korea. It was made to operate in the rugged environment of the Demilitarized Zone with North Korea.

This system has been well received by the Indian Army, as part of its long-staggered artillery modernization process and increases its firepower multiple times with the gunners.

Major General Rana Goswami also warned – "It can be very useful in the terrain of Ladakh with its long around 50 km range and ability to fire in low (below 45 degrees) and high angle (higher than 45 degrees). It can be very effective in a hot war scenario but will need protection from drone attacks."

https://eurasiantimes.com/india-china-tensions-can-k-9-vajra-mow-down-pla/

Business Standard

Sat, 02 Oct 2021

India, US to set up joint working group on defence industrial security

To formalise and refine their joint security protocols, Washington and New Delhi held a five-day Industrial Security Agreement summit that began on Monday and ended on Friday in the national capital

By Ajai Shukla

New Delhi: As Chinese and Russian cyber-spies increase snooping via the internet to pick up American defence secrets, including stealth and long-range unmanned aerial vehicle (UAV) technology, the US and Indian defence industrial establishments are developing joint protocols to block any leakage of classified information from their communications.

Indo-US Joint Working Group to meet regularly to collaborate on safeguarding defence technologies

To formalize and refine their joint security protocols, Washington and New Delhi held a five-day Industrial Security Agreement (ISA) summit that began on Monday and ended on Friday in the capital.

The summit was led by Designated Security Authorities (DSAs) from both sides. The Indian DSA is Anurag Bajpai from the Ministry of Defence (MoD), while the American DSA is David Paul Bagnati.

The two sides reached an "In principle agreement to establish an Indo-US Industrial Security Joint Working Group," said an Indian MoD statement on Friday. "The Group is to meet regularly to align policies for defence industries to collaborate on critical defence technologies," it said.

The US-India framework for industrial technology security began with an agreement termed "General Security of Military Information Agreement" (GSOMIA), which was signed on January 17, 2002 between the Indian and US defence ministers of that time, George Fernandes and Donald Rumsfeld.

GSOMIA 2002 prescribes security standards and protocols for safeguarding information shared by the Pentagon with India's defence ministry; and by US defence firms with Indian defence public sector undertakings (DPSUs).

However, GSOMIA does not cover the exchange of classified information with Indian private industry. Washington wanted this covered too, given New Delhi's emphasis on the proposed "strategic partnership" (SP) model of procurement. The SP model involves the manufacture of defence equipment by Indian private firms, using technology supplied by American "original equipment manufacturers" (OEMs).

For this, Washington asked New Delhi to sign an annexure to GSOMIA 2000, which would cover the Indian private sector. That agreement, called the Industrial Security Agreement (ISA), was signed in December 2019. Now that is being taken further.

"During the summit, both sides agreed in principle to establish the Indo-US Industrial Security Joint Working Group. This group will meet periodically to align the policies and procedures expeditiously that will allow the (two countries') defence industries to collaborate on cutting edge defence technologies," stated the Indian MoD on Friday.

The DSAs also visited selected Indian defence industries to prepare for setting up a roadmap.

GSOMIA 2000 is not a public document. It is one of four agreements – initially termed "foundational agreements" by Washington, but subsequently toned down to "enabling agreements" – that US legislation requires for facilitating deeper defence cooperation with India.

A second agreement, the Logistic Exchange Memorandum of Agreement (LEMOA) that facilitates mutual logistical inter-dependence, was signed in 2016 and the Communications Compatibility and Security Arrangement (COMCASA) in 2018.

The last of the four — the so-called Basic Exchange and Cooperation Agreement (BECA) for Geospatial Intelligence – was signed last October. This allows India's military to access a range of US topographical, nautical and aeronautical data that enables more accurate missile and long-range unmanned airborne vehicle guidance and targeting.

https://www.business-standard.com/article/economy-policy/india-us-to-set-up-joint-working-group-on-defence-industrial-security-121100101102_1.html

Science & Technology News

Hindustan Times

Sun, 03 Oct 2021

ISRO Scientists scramble to meet Gaganyaan deadline

By Anonna Dutt

New Delhi: Scientists at the Indian Space Research Organisation (ISRO) are hard at work to get all the systems in place, including a human-rated launch vehicle, crew and service modules, a crew escape system, and the environment control and life support systems (ECLSS), to meet the launch timeline of the Gaganyaan mission slated for late 2022 or early 2023, according to people familiar with the matter at the space station.

The Gaganyaan mission — India's first manned space flight — aims to carry three crew members to an orbit about 400km above the earth for five to seven days, and get them back safely. Here is the tech being developed specifically for the mission, according to Isro annual report and a webinar.

The space agency has completed testing two of the three stages of the human-rated launch vehicle(File Photo)

Launch Vehicle

The mission plans to use the newly operationalized GSLV MkIII launch vehicle that carried Chandrayaan-2. However, it will need to be "human rated", or get enough systems and redundancies built in so that it becomes safe to carry humans, rather than just satellites.

To do this, the vehicle itself has undergone a redesign, including changes in the shape of its solid motor nozzles and use of a more aerodynamic 4m ogive (bullet-shaped) payload fairing where the crew module will be housed. The vehicle's digital and intelligence systems are also being enhanced for better integrated monitoring of the vehicle's health. "It's not that the rockets are going to be new, but it has to be extra reliable. We have to build in high levels of redundancy and also high levels of intelligence into it. The GSLV MKIII is being re-engineered and most of the work is in electronics and algorithms and in building higher levels of reliability in the mechanical and propulsion systems," said director of Vikram Sarabhai Space Centre, S Somnath, in a webinar on launch vehicles last month.

"The system will be such that it will decide when the rocket has to be destroyed by itself. So far, this intelligence was not given to any of the rockets and it was decided by someone on ground. The

vehicle health management system will run a model internally, compare the actual flight with the model flight on the on-board computer, and see whether there is perturbation. Depending on the extent of perturbation, decision will be taken to abort the emission and go for crew escape," he added.

The space agency has completed testing two of the three stages of the human-rated launch vehicle, with only the testing and qualification of the upper cryogenic stage remaining, according to the agency.

Test Vehicle Project

A key element to making the launch vehicle safe for travel of humans is to create a crew escape system (escape from the crew module in case of emergency) pad abort system (to stop the flight on the launch pad in case of an emergency).

The design of the escape system has been finalised with five "quick-acting" solid fuel motors with a high burn rate propulsion system, and fins to maintain stability. The crew escape system will separate from the crew module by firing explosive nuts.

To test these escape systems, Isro has designed a new rocket called the Test Vehicle, which will take the crew module up in space and then switch off to see how the escape system functions. "We can't put the crew module in an actual rocket and then make it fail to see what happens. So we have made a rocket that will take the module in space and then terminate the vehicle to demonstrate the crew escape system. This is a fully autonomous rocket. This is almost completed and the first flight vehicle is undergoing integration...," Somnath explained at the webinar. He said the vehicle design will be used to develop future reusable launch vehicles.

Crew and service module

The crew module will be a conical structure with a height of 3m and a diameter of 3.5m. It will house three crewmembers, their seats, electronics for aviation, and ECLSS meant to maintain the pressure, temperature, humidity, and composition of gasses. The space agency has finalised the configuration of a human metabolic simulator that will mimic the crew's heat release, breathing, and sweating to check the working of the ECLSS systems.

The space agency has created a life-size mock-up of the module to test integration with other systems. The layout for ECLSS, electronics, and other subsystems have been finalised. The crew module and a hexagonal service module are together called the orbital module, which will remain in space during the mission. The number of solar panels, wings, power requirements, antennae, and sensors have been finalised, and the space agency has started fabrication of the module for the first unmanned mission; it will carry out two unmanned missions before sending men to space.

Supporting technologies

In addition to the main modules of the mission, scientist are also developing parachutes to slow down the crew module during its return, shields to protect the modules from space debris, and a crew health monitoring system, space food, and emergency survival kits. Isro, along with the Indian Navy, is also planning for multiple scenarios for quick and efficient recovery for the crew once they return to earth.

"...The mission will solve several critical challenges that come with putting humans in a launch vehicle, chief among them is designing a crew module that can absorb the vibrations created during lift-off and keep the crew members safe," said Dr SM Ahmed, head of central instruments laboratory at University of Hyderabad and former scientist.

https://www.hindustantimes.com/india-news/isro-scientists-scramble-to-meet-gaganyaan-deadline-101633203581692.html

Sun, 03 Oct 2021

ISRO plans to develop next-generation astronomy satellite; Know about India's first astronomy mission AstroSat

By Roopashree Sharma

The Indian Space Research Organization (ISRO) is planning to develop a next-generation astronomy satellite. ISRO had launched its first mission for the purpose of astronomy AstroSat on September 28, 2015. The mission has a life of five years. It is still functional. "AstroSat is expected to last some more years. We can expect some more results to come which will be path-breaking," said AS Kiran Kumar, Chairman, ISRO and Mission Lead, AstroSat.

On the possibility of ISRO launching the next mission for astronomy, Kumar said, "Not AstroSat-2. Next Generation."

About AstroSat, India's first satellite for astronomy

Launch Date, Launch Vehicle of AstroSat

AstroSat, India's first satellite for astronomy was successfully launched on September 28, 2015, from Satish Dhawan Space Centre, Sriharikota. It was launched on 6 foreign satellites by ISRO's Polar Satellite Launch Vehicle-C30 (PSLV-C30). It has completed five years in September 2020.

With a resolution three times more than NASA's Galex mission, AstroSat has mapped star clusters, explored satellite galaxies of the Milky Way called Magellanic Clouds. With the launch of AstroSat, India joined the league of countries with space observatories namely the US, Russia, Japan, and the European Space Agency.

Functions of AstroSat

AstroSat is a multi-wavelength space observatory. It has been designed to observe celestial bodies such as distant stars through optical, ultraviolet, low and high-energy X-ray components of the electromagnetic spectrum. The data provided by AstroSat is widely used for studying various fields of astronomy, from galactic to extra-galactic.

AstroSat had detected extreme-UV light from one of the farthest star galaxies known as AUDFs01. The galaxy is 9.3 billion light-years away from Earth. An international team of astronomers including scientists from India, the US, the Netherlands, France, Switzerland, and Japan led by Dr Kanak Saha at the Inter-University Centre for Astronomy and Astrophysics (IUCAA), Pune had made the discovery and reported in 'Nature Astronomy'.

For the very first time, AstroSat has also detected rapid variability of high energy (particularly >20keV) X-ray emission from a black hole system.

Payloads of AstroSat

AstroSat has been equipped with scientific payloads including six key instruments such as sky monitors, X-ray and ultraviolet telescopes, and special imager. The six key instruments have jointly been developed by ISRO, Inter-University Centre for Astronomy and Astrophysics (IUCAA), and Tata Institute of Fundamental Research (TIFR).

The six instruments are Charged Particle Monitor (CPM), Cadmium Zinc Telluride Imager (CZTI), Scanning Sky Monitor (SSM), LAXPC Instrument, UltraViolet Imaging Telescope (UVIT), and Soft X-ray imaging Telescope (SXT).

Orbit, Mission Life of AstroSat

AstroSat has been placed in Low-Earth Equatorial Orbit at an altitude of 650 km. The mission life of AstroSat has been designed for five years.

https://www.jagranjosh.com/current-affairs/isro-plans-to-develop-nextgeneration-astronomy-satellite-know-about-indias-first-astronomy-mission-astrosat-1633158551-1

The Indian EXPRESS

Sat, 02 Oct 2021

ISRO's commercial arm to launch its first demand-based communication satellite next year

The entire satellite capacity on-board GSAT-24 will be leased to DTH services provider Tata Sky, NewSpace India Limited (NSIL) has said

Bengaluru: NewSpace India Limited (NSIL), the newly created commercial arm of the Indian Space Research Organisation (ISRO), will put together its first demand-based communication satellite for the satellite-based DTH television services provider Tata Sky.

NewSpace India Limited (File Photo)

The GSAT-24, a 4,000 kg class Ku-band satellite with all transponders dedicated for DTH services, will be launched by the Ariane-5 from Europe's Arianespace early next year. "The entire satellite capacity on-board GSAT-24 will be leased to its committed customer M/s Tata Sky for meeting their DTH application needs," an NSIL statement said Friday.

The satellite will be owned and operated by NSIL, which will also be the intermediary agency between ISRO, Arianespace and Tata Sky.

NSIL, which has been created to commercialise research work and capabilities of the ISRO, is looking to emerge as an Indian communications satellite operator by taking over ISRO satellites to provide DTH and broadband services to customers on demand.

In March this year, the officials of NSIL – incorporated in 2019 – had stated that two deals were in the pipeline with a DTH operator and a broadband service provider in India.

NSIL officials had said on March 12 that it will take over two communication satellites to be launched by ISRO and is in talks with the space department to take over ISRO's fleet of communication satellites. "Shortly, NSIL will finalise requirements for new satellites in consultation with various users and start procuring, owning, launching and providing services, primarily in the communication sector. We are also in an advanced stage of discussion with DoS to take ownership of two new communication satellites," NSIL Chairman and MD G Narayanan had stated.

"NSIL now has a much bigger responsibility of owning the satellites – which is identifying a satellite, getting it launched and owning it to provide services. This is a major service that NSIL is looking to offer. This will make us a kind of a satellite operator," its Director (technical and strategy) D Radhakrishnan had said then.

The move is a shift from existing policy in which transponders on communication satellites are leased to customers like DTH service providers through ISRO's existing controversial commercial arm Antrix Corporation which has now started taking a back seat. Antrix Corporation has previously courted controversies over deals in which satellites were dedicated to provide communication services for companies like the Bengaluru startup Devas Multimedia Pvt Ltd.

In an ongoing legal battle with Indian authorities in the US, Devas Multimedia has alleged that NSIL has been created to replace Antrix Corporation in order to circumvent liabilities arising from compensation awards made against Antrix Corporation by international arbitration tribunals over a failed 2005 Devas Multimedia-Antrix satellite deal.

The move to get NSIL to own and operate ISRO's communication satellites is an effort to maximise profits from satellite launches and to allow ISRO to focus on "advanced research and development", NSIL officials have said.

"Earlier we were supply-driven and now we are demand-driven and the basic thing is that there should be an identified customer who is going to fully utilise the satellite capacity and there should be good profitability. We want to ensure maximum utilisation of a satellite," the NSIL official said.

Narayanan said the new firm is also in talks with the space department to take over all existing ISRO communication satellites. "We are in discussions to take over all 26 of them," he said. While the demand for satellites for DTH services comes from providers like TataSky, Sun Direct and so on, the demand for satellites for broadband services comes from Indian telecom operators, NSIL officials said.

After successful fulfilment of its first deal for launch of a commercial satellite on February 28, 2021 – the Brazilian Amazonia-1 satellite on board ISRO's PSLV rocket – NSIL will have four more commercial launches over the next two years, NSIL had said in March. The company has been provided a budget of Rs 700 crore for the next five years to emerge as a premier space services provider, the officials said.

https://indianexpress.com/article/cities/bangalore/nsil-communication-satellite-tata-sky-7547527/

THE TIMES OF INDIA

Sun, 03 Oct 2021

ISRO lines up 3 Earth Observation Satellites with key indigenous technologies

By Chethan Kumar

The Indian Space Research Organisation (Isro), which has had a negligible year so far as launch missions go, is hoping to launch three Earth Observation Satellites (EOSs) in the last quarter of 2021.

While two of them — EOS-4 (Risat-1A) and EOS-6 (Oceansat-3) — will be launched using Isro's workhorse PSLV, the third one, EOS-2 (Microsat), will be launched in the first developmental flight of the Small Satellite Launch Vehicle (SSLV), marking the beginning of a new class of launch vehicles in India.

ISRO has completed SSLV Payload Fairing (SPLF) functional qualification test successfully and other testing activities are in progress. EOS-4 was to be originally launched in September, sources in Isro said, adding that the review committee had not cleared the satellite, which postponed the launch.

Isro chairman K Sivan told TOI: "The plan is to achieve those launches by the end of this year, but since we would be using some key indigenous systems like TR module, TWTA and circulators as part of our endeavour to reduce imports, we will be carrying out extensive tests to find if there are any technical issues. This may take some time."

TR modules refer to transmit and receive modules that help in telemetry and tracking of the satellites, while TWTA (Traveling Wave Tube Amplifiers) are commonly used in satellite communication links, earth observation payloads, scientific missions or probes, inter-spacecraft communications links etc.

As reported by TOI in March, Isro has been looking at indigenising various technologies aimed at reducing imports.

New Model

Further, Sivan said that the launch of EOS-4 would also mark the beginning of a new model for Isro as intended by the space reforms initiated by the Centre.

"...Earlier, we had a supply driven model. After Isro made a satellite, we offered it to ministries and government agencies. Now, even Isro is looking at a demand-driven model. From the next satellite, we will be doing this," he said.

The three satellites that the space agency is planning to launch are meant for ministries like agriculture, home affairs, earth sciences and environment and forests.

Unlike communication satellites where the entire capacity could be demanded by one customer, a single Earth observation satellite can simultaneously cater to multiple customers as the data generated by these satellites can be analysed for different uses.

https://timesofindia.indiatimes.com/india/isro-lines-up-3-earth-observation-satellites-with-key-indigenous-technologies/articleshow/86711823.cms

The Telegraph online

Sun, 03 Oct 2021

IIT (ISM) Dhanbad's Physics dept develops advanced luminescent material

Dhanbad: A research group comprising Prof J Manam, Prof S K Sharma and Dr. Sourav Das of IIT (ISM)'s Department of Physics, has developed advanced luminescent materials for defence and security applications.

IIT(ISM), Dhanbad

The Rs 37 lakh project, which has been on for three years has resulted in the development of a substance that can be used for tagging, tracking and locating defence applications.

This material exhibits – 'Long persistent luminescence', a phenomenon in which material exhibits light after being exposed to solar light for a long time.

The IIT (ISM) during the first 2 ½ years of research which began on from March 2019 developed long persistent phosphor material which gives emission to the Near Infrared Region (NIR)

The material can be excited by the solar radiation during the day time and NIR radiation can be observed by night vision monocular for 24 hours.

Talking to The Telegraph Online today, Sourav Das said, "We began the project during March last year and have already prepared the material at the laboratory level and its application has also been made for which publication has already been made in a reputed journal."

He added, "This material has been developed for the first time in India. It took us 2 ½ years of the allotted three years to develop this material. Despite the institute remaining closed due to the pandemic, we have been able to meet the target." This material is akin to the material used in the glowing duck, a toy for the kids.

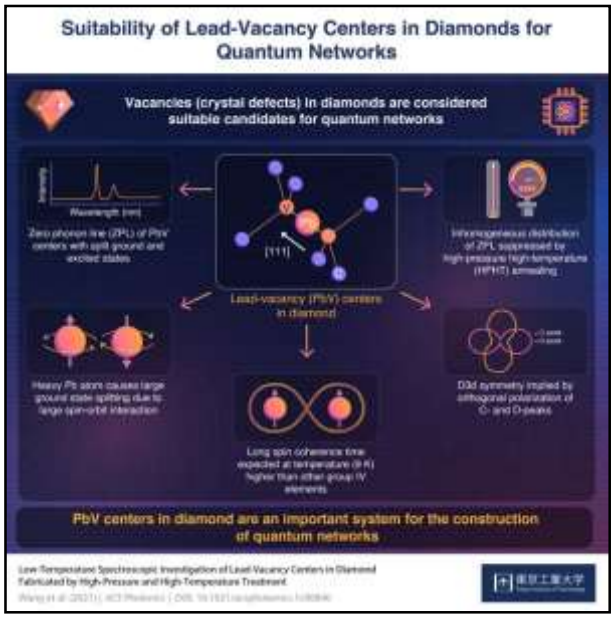
https://www.telegraphindia.com/jharkhand/jharkhand-news-digest-iit-ism-dhanbads-physics-department-develops-advanced-luminescent-material-for-defence-and-security-purposes/cid/1833256

PHYS.ORG

Sat, 02 Oct 2021

How flawed diamonds 'lead' to flawless quantum networks

The color in a diamond comes from a defect, or "vacancy," where there is a missing carbon atom in the crystal lattice. Vacancies have long been of interest to electronics researchers because they can be used as 'quantum nodes' or points that make up a quantum network for the transfer of data. One of the ways of introducing a defect into a diamond is by implanting it with other elements, like nitrogen, silicon, or tin. In a recent study published in *ACS Photonics*, scientists from Japan demonstrate that lead-vacancy centers in diamond have the right properties to function as quantum nodes. "The use of a heavy group IV atom like lead is a simple strategy to realize superior spin properties at increased temperatures, but previous studies have not been consistent in determining the optical properties of lead-vacancy centers accurately," says Associate Professor Takayuki Iwasaki of Tokyo Institute of Technology (Tokyo Tech), who led the study.



Credit: Tokyo Tech

The three critical properties researchers look for in a potential quantum node are symmetry, spin coherence time, and zero phonon lines (ZPLs), or electronic transition lines that do not affect "phonons," the quanta of crystal lattice vibrations. Symmetry provides insight into how to control spin (rotational velocity of subatomic particles like electrons), coherence refers to an identicalness in the wave nature of two particles, and ZPLs describe the optical quality of the crystal.

The researchers fabricated the lead-vacancies in diamond and then subjected the crystal to high pressure and high temperature. They then studied the lead vacancies using photoluminescence spectroscopy, a technique that allows you to read the optical properties and to estimate the spin properties. They found that the lead-vacancies had a type of dihedral symmetry, which is appropriate for the construction of quantum networks. They also found that the system showed a large "ground state splitting," a property that contributes to the coherence of the system. Finally, they saw that the high-pressure high-temperature treatment they inflicted upon the crystals suppressed inhomogeneous distribution of ZPLs by recovering the damage done to the crystal lattice during the implantation process. A simple calculation showed that lead-vacancies had a long spin coherence time at a higher temperature (9K) than previous systems with silicon and tin vacancies.

"The simulation we presented in our study seems to suggest that the lead-vacancy center will likely be an essential system for creating a quantum light-matter interface—one of the key elements in the application of quantum networks," concludes an optimistic Dr. Iwasaki.

This study paves the way for the future development of large (defective) diamond wafers and thin (defective) diamond films with reliable properties for quantum network applications.

More information: Peng Wang et al, Low-Temperature Spectroscopic Investigation of Lead-Vacancy Centers in Diamond Fabricated by High-Pressure and High-Temperature Treatment, *ACS Photonics* (2021). DOI: 10.1021/acsphotonics.1c00840

Journal information: *ACS Photonics*

https://phys.org/news/2021-10-flawed-diamonds-flawless-quantum-networks.html

PHYS.ORG

Sat, 02 Oct 2021

Optically generated quantum fluids of light reveal exotic matter-wave states in condensed matter physics

Researchers from Skoltech and the University of Southampton, U.K., have used all-optical methods to create an artificial lattice whose nodes house polaritons—quasiparticles that are half-light and half-matter excitations in semiconductors. This so-called Lieb lattice, which usually does not occur in nature, enabled the team to demonstrate breakthrough results important for condensed matter physics. From the applications perspective, the laser-generated polariton lattice, reported in *Nature Communications*, can be used for the design of next-generation devices like optical computers reliant on dispersion management and guided light.

Credit: CC0 Public Domain

In the strong light-matter coupling regime, electronic excitations in a semiconductor placed between two mirrors that form a microcavity become strongly influenced by the photons trapped within. This gives rise to new quantum modes called exciton-polaritons, or just polaritons for short. They enable the study of hybrid matter-wave and photonic phenomena at the microscale. Under the right conditions, polaritons can form coherent many-body states of matter similar to Bose-Einstein condensates, providing access to exotic dissipative nonlinear dynamics.

The researchers decided to explore how these condensates behave in artificial optical lattices not usually found in nature. For this they used a programmable spatial light modulator to shape a laser beam into a lattice inside the cavity, not unlike the laser pointer caps for projecting fancy patterns on distant surfaces. The generated polaritons both increased in number and became more energetic where the laser field was most intense. At high enough laser power, the polaritons started forming condensates that resided on the potential maxima of the lattice. In this so-called ballistic regime, high-energy polariton waves escaping the condensates scattered and diffracted across the lattice.

The researchers observed that when the lattice constant was decreased, the condensates underwent a phase transition from the ballistic regime to the opposite case of deeply trapped condensates now residing in the potential minima of the lattice. At intermediate lattice constants, the system seemed unable to "decide" whether the polariton waves should be delocalized or localized, and instead the condensates fractured across multiple energies. Such a transition had never been observed previously in polariton lattices.

The researchers then demonstrated that they could produce one of the most exotic features in solid-state physics—completely dispersionless crystal bands, also known as flatbands—where particle mass becomes effectively infinite. For this they designed an optical Lieb lattice, not conventionally found in nature, which is known to possess flatbands.

The study reported in this story was co-authored by young researchers from the Hybrid Photonics Lab led by Professor Pavlos Lagoudakis, who provided the following comment on the team's findings: "Our lab has developed great expertise in optical lattices of polariton condensates, and with this work we have taken one more step forward. These results will be of great interest to a broad scientific community spanning nonlinear optics, condensed matter physics, cold atoms, light-matter physics, and polaritonics. This is the first demonstration of nontrivial phases of matter and flatband engineering in optically generated polariton lattices. Previously, flatband states in polariton systems had only been shown in lithographically written structures."

The first author of the paper, experimental physicist Dr. Sergey Alyatkin from Skoltech, and his colleague, theoretical physicist Dr. Helgi Sigurdsson from the University of Southampton, added, "Our work is a very nice demonstration of the advancements in optical control and richness in the field of polaritonics. The more we study microcavity polaritons in lattices, the more interesting effects we observe. Our latest results have opened a route to unexplored physics of nonstationary lattice mixtures of matter-wave quasiparticles, and we are not confining ourselves to a specific type of investigated lattice."

More information: S. Alyatkin et al, Quantum fluids of light in all-optical scatterer lattices, *Nature Communications* (2021). DOI: 10.1038/s41467-021-25845-4

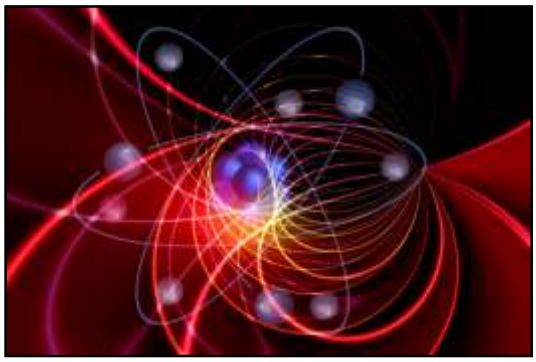
Journal information: *Nature Communications*

https://phys.org/news/2021-09-optically-quantum-fluids-reveal-exotic.html

Sat, 02 Oct 2021

A kagome lattice superconductor reveals a 'cascade' of quantum electron states

Researchers have discovered a complex landscape of electronic states that can co-exist on a kagome lattice, resembling those in high-temperature superconductors, a team of Boston College physicists reports in an advance electronic publication of the journal *Nature*.



Credit: CC0 Public Domain

The focus of the study was a bulk single crystal of a topological kagome metal, known as CsV_3Sb_5—a metal that becomes superconducting below 2.5 degrees Kelvin, or minus 455 degrees Fahrenheit. The exotic material is built from atomic planes composed of Vanadium atoms arranged on a so-called kagome lattice—described as a pattern of interlaced triangles and hexagons—stacked on top of one another, with Cesium and Antimony spacer layers between the kagome planes. The material offers a window into how the physical properties of quantum solids—such as light transmission, electrical conduction, or response to a magnetic field—relate to the underlying geometry of the atomic lattice structure. Because its geometry causes destructive interference and "frustrates" the kinetic motion of traversing electrons, kagome lattice materials are prized for offering the unique and fertile ground for the study of quantum electronic states described as frustrated, correlated and topological.

The majority of experimental efforts thus far have focused on kagome magnets. The material the team examined is not magnetic, which opens the door to investigate how electrons in kagome systems behave in the absence of magnetism. The electronic structure of these crystals can be classified as "topological", while high electrical conductivity makes it a "metal".

"This topological metal becomes superconducting at low temperature, which is a very rare occurrence of superconductivity in a kagome material," said Boston College Associate Professor of Physics Ilija Zeljkovic, a lead co-author of the report, titled "Cascade of correlated electron states in a kagome superconductor CsV_3Sb_5."

In a metal, electrons in the crystal form a liquid state. Electrical conduction happens when the charged liquid flows under a bias voltage. The team used scanning tunneling spectroscopy to probe the quantum interference effects of the electron liquid, said Zeljkovic, who conducted the research with Boston College colleagues Professor of Physics Ziqiang Wang, graduate student Hong Li, and

He Zhao, who earned his doctorate in Physics at BC in 2020, as well as colleagues from the University of California, Santa Barbara.

The experiments revealed a "cascade" of symmetry-broken phases of the electron liquid driven by the correlation between the electrons in the material, the team reported.

Occurring consecutively as the temperature of the material was lowered, ripples, or standing waves, emerge first in the electron liquid, known as charge density waves, with periodicity different from the underlying atomic lattice. At a lower temperature, a new standing wave component nucleates only along one direction of the crystal axes, such that electrical conduction along this direction is different than in any other direction.

These phases develop in the normal state—or the non-superconducting metallic state—and persist below the superconducting transition, Wang said. The experiments demonstrate that superconductivity in CsV_3Sb_5 emerges from, and coexists with, a correlated quantum electronic state that breaks spatial symmetries of the crystal.

The findings could have strong implications for how the electrons form "Cooper" pairs and turn into a charged superfluid at an even lower temperature, or a superconductor capable of electrical conduction without resistance. In this family of kagome superconductors, other research has already suggested the possibility of unconventional electron pairing, said Zeljkovic.

Researchers in the field have noted a phenomenon called time-reversal symmetry breaking in CsV_3Sb_5. This symmetry rule—which holds that actions would be performed in reverse if time were to run backwards—is typically broken in magnetic materials, but the kagome metal shows no substantial magnetic moments. Zeljkovic said next steps in this research are to understand this apparent contradiction and how the electronic states revealed in this recent work are related to time-reversal symmetry breaking.

The level of significance and research into these recently-discovered kagome lattice superconductors is reflected in an associated *Nature* article published in the same advance electronic edition. Also co-authored by BC's Ziqiang Wang, the paper, titled "Roton pair density wave in a strong-coupling kagome superconductor," reports the observation of novel standing waves formed by Cooper pairs with yet another periodicity in the same kagome superconductor, CsV_3Sb_5. "The publishing of these two reports side-by-side not only reveals new and broad insights into kagome lattice superconductors, but also signals the high level of interest and excitement surrounding these materials and their unique properties and phenomena, which researchers at Boston College and institutions around the world are discovering with increasing frequency," Wang said.

More information: He Zhao et al, Cascade of correlated electron states in a kagome superconductor CsV_3Sb_5, *Nature* (2021). DOI: 10.1038/s41586-021-03946-w

Journal information: *Nature*

https://phys.org/news/2021-09-kagome-lattice-superconductor-reveals-cascade.html

REUTERS

Sat, 02 Oct 2021

Merck pill seen as 'huge advance,' raises hope of preventing COVID-19 deaths

By Deena Beasley and Carl O'donnell

Summary

- ***Merck will seek U.S. approval for pill as soon as possible***
- ***If approved, would be 1st oral antiviral COVID-19 drug***
- ***Merck shares rally, some vaccine makers fall***
- ***U.S. government to buy 1.7 mln courses at $700 each***

Oct 1 (Reuters) - An experimental antiviral pill developed by Merck & Co (MRK.N) could halve the chances of dying or being hospitalized for those most at risk of contracting severe COVID-19, according to data that experts hailed as a potential breakthrough in how the virus is treated.

An experimental COVID-19 treatment pill called molnupiravir being developed by Merck & Co Inc and Ridgeback Biotherapeutics LP, is seen in this undated handout photo released by Merck & Co Inc and obtained by Reuters May 17, 2021. Merck & Co Inc/Handout

If it gets authorization, molnupiravir, which is designed to introduce errors into the genetic code of the virus, would be the first oral antiviral medication for COVID-19.

Merck and partner Ridgeback Biotherapeutics said they plan to seek U.S. emergency use authorization for the pill as soon as possible and to make regulatory applications worldwide.

"An oral antiviral that can impact hospitalization risk to such a degree would be game-changing," said Amesh Adalja, senior scholar at the Johns Hopkins Center for Health Security.

Current treatment options include Gilead Sciences Inc's (GILD.O) infused antiviral remdesivir and generic steroid dexamethasone, both of which are generally only given once a patient has already been hospitalized.

"This is going to change the dialogue around how to manage COVID-19," Merck Chief Executive Robert Davis told Reuters.

Existing treatments are "cumbersome and logistically challenging to administer. A simple oral pill would be the opposite of that," Adalja added.

The results from the Phase III trial, which sent Merck shares up more than 9%, were so strong that the study is being stopped early at the recommendation of outside monitors.

Shares of Atea Pharmaceuticals Inc (AVIR.O), which is developing a similar COVID-19 treatment, were up more than 21% on the news.

Shares of COVID-19 vaccine makers Moderna Inc (MRNA.O) were off more than 10%, while Pfizer (PFE.N) was down less than 1%.

Jefferies analyst Michael Yee said investors believe "people will be less afraid of COVID and less inclined to get vaccines if there is a simple pill that can treat COVID."

Pfizer and Swiss drugmaker Roche Holding AG (ROG.S) are also racing to develop an easy-to-administer antiviral pill for COVID-19. For now, only antibody cocktails that have to be given intravenously are approved for non-hospitalized patients.

White House COVID-19 response coordinator Jeff Zients said on Friday that molnupiravir is "a potential additional tool... to protect people from the worst outcomes of COVID," but added that vaccination "remains far and away, our best tool against COVID-19."

A planned interim analysis of 775 patients in Merck's study looked at hospitalizations or deaths among people at risk for severe disease. It found that 7.3% of those given molnupiravir twice a day for five days were hospitalized and none had died by 29 days after treatment. That compared with a hospitalization rate of 14.1% for placebo patients. There were also eight deaths in the placebo group.

"Antiviral treatments that can be taken at home to keep people with COVID-19 out of the hospital are critically needed," Wendy Holman, Ridgeback's CEO, said in a statement.

'A huge advance'

Scientists welcomed the potential new treatment to help prevent serious illness from the virus, which has killed almost 5 million people around the world, 700,000 of them in the United States.

"A safe, affordable, and effective oral antiviral would be a huge advance in the fight against COVID," said Peter Horby, a professor of emerging infectious diseases at the University of Oxford.

The study enrolled patients with laboratory-confirmed mild-to-moderate COVID-19, who had symptoms for no more than five days. All patients had at least one risk factor associated with poor disease outcome, such as obesity or older age.

Drugs in the same class as molnupiravir have been linked to birth defects in animal studies. Merck has said similar studies of molnupiravir – for longer and at higher doses than used in humans – indicate that the drug does not affect mammalian DNA.

Merck said viral sequencing done so far shows molnupiravir is effective against all variants of the coronavirus including the highly transmissible Delta, which has driven the recent worldwide surge in hospitalizations and deaths.

It said rates of adverse events were similar for both molnupiravir and placebo patients, but did not give details.

Merck has said data shows molnupiravir is not capable of inducing genetic changes in human cells, but men enrolled in its trials had to abstain from heterosexual intercourse or agree to use contraception. Women of child-bearing age in the study could be pregnant and also had to use birth control. The U.S. drugmaker said it expects to produce 10 million courses of the treatment by the end of 2021. The company has a U.S. government contract to supply 1.7 million courses of molnupiravir at a price of $700 per course.

Davis said Merck has similar agreements with other governments, and is in talks with more. Merck said it plans a tiered pricing approach based on country income criteria.

The U.S. government has the option to purchase up to an additional 3.5 million treatment courses if needed, a U.S. health official told Reuters. The official asked to remain anonymous because they were not authorized to comment publicly on the contract.

Merck has also agreed to license the drug to several India-based generic drugmakers, which would be able to supply the treatment to low- and middle-income countries.

Molnupiravir is also being studied in a Phase III trial for preventing infection in people exposed to the coronavirus. Merck officials said it is unclear how long the FDA review will take, although Dean Li, head of Merck's research labs, said, "they are going to try to work with alacrity on this."

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